RUBBER and PLASTICS WEEKLY

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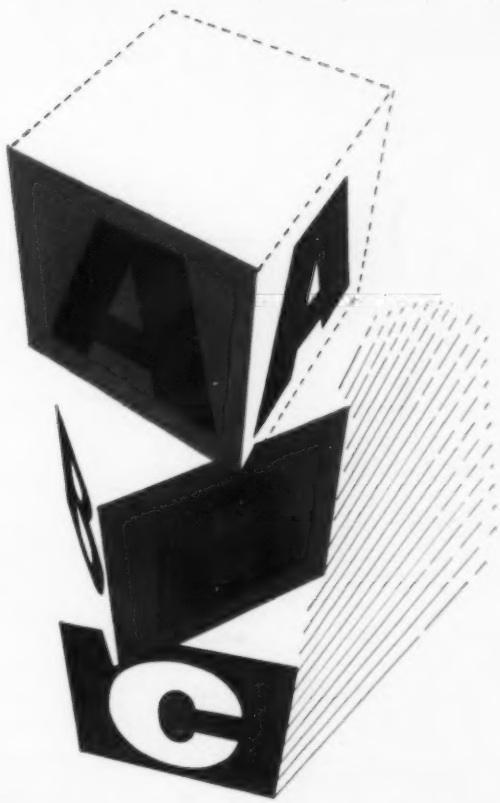

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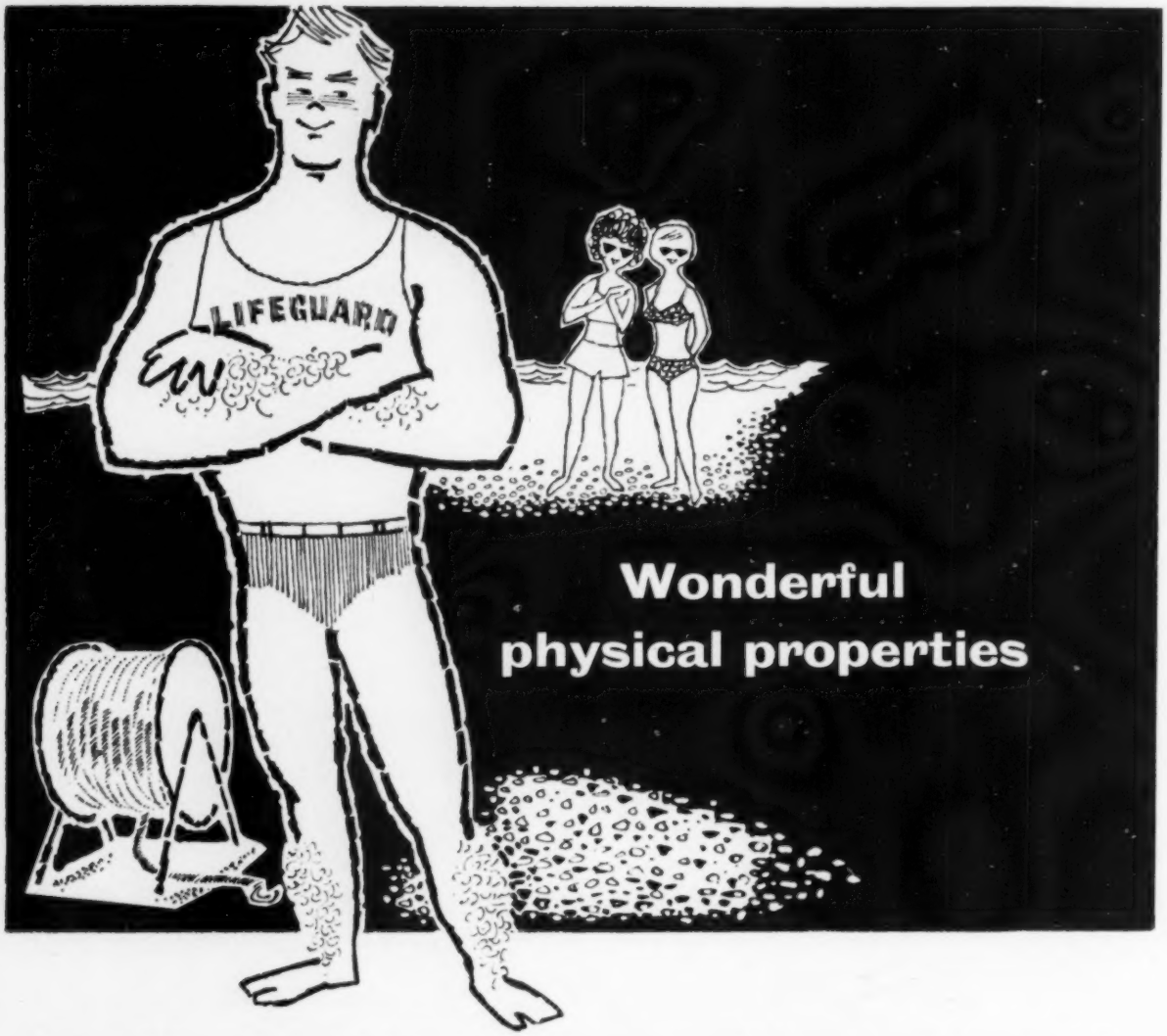

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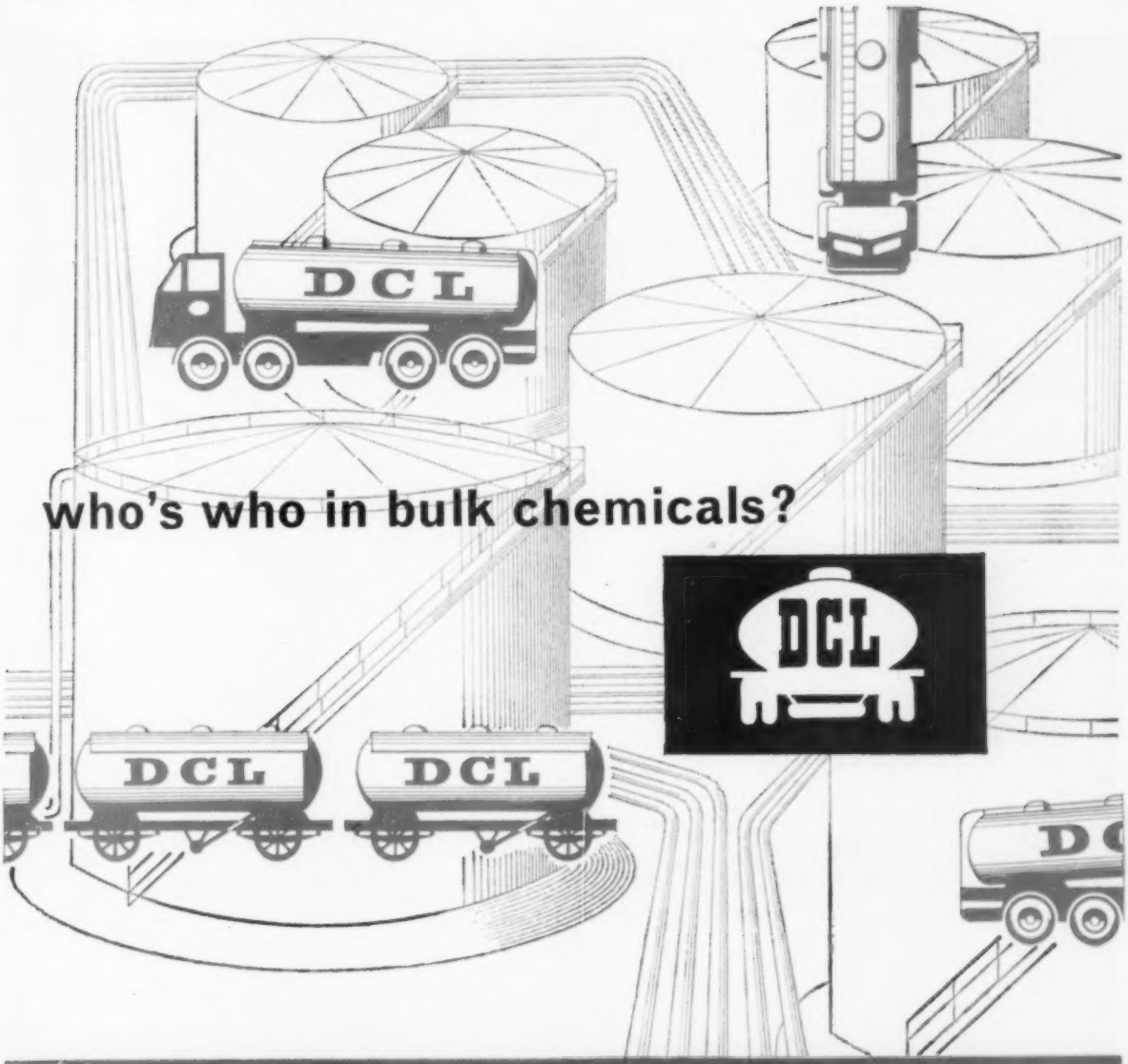

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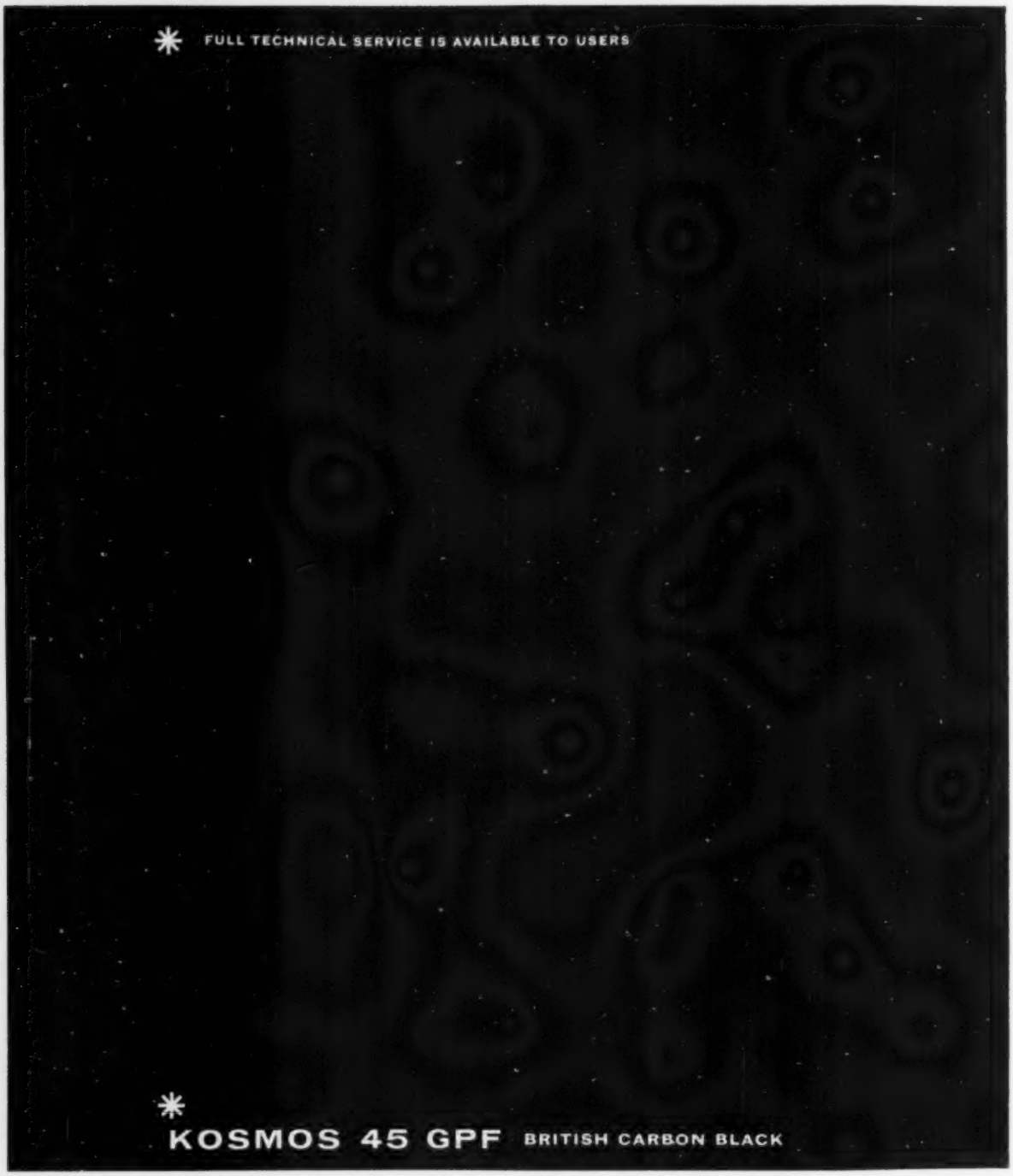

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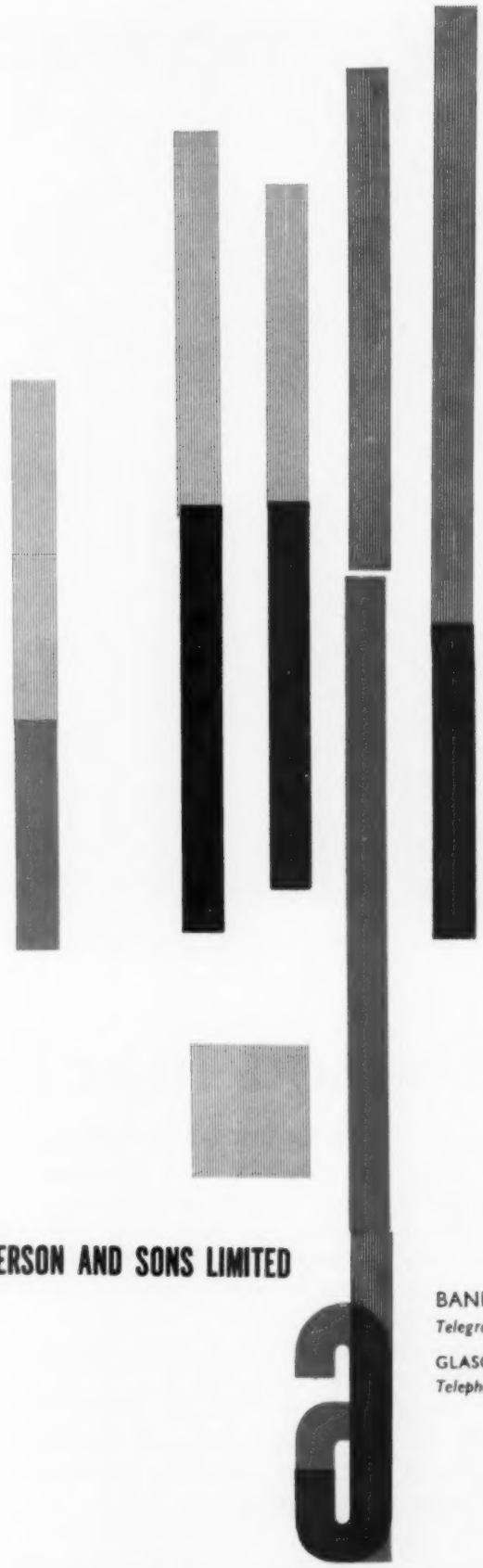

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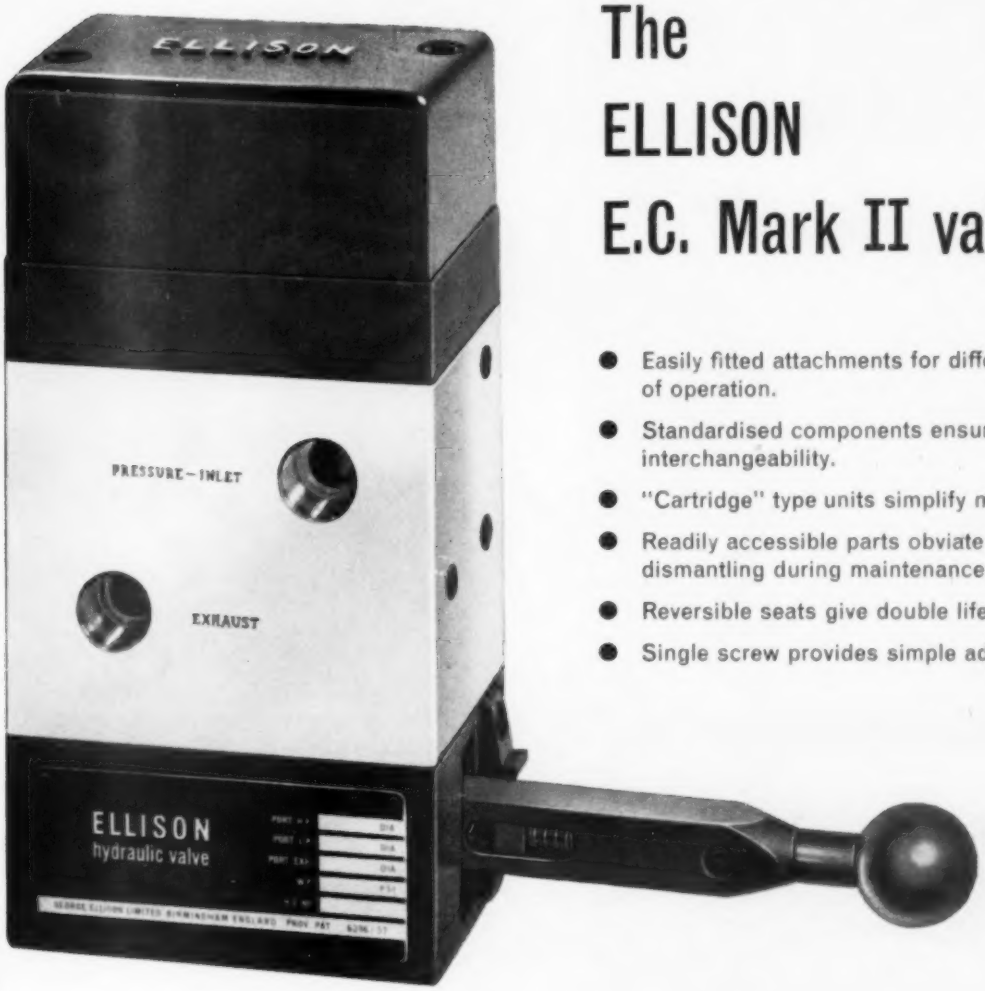

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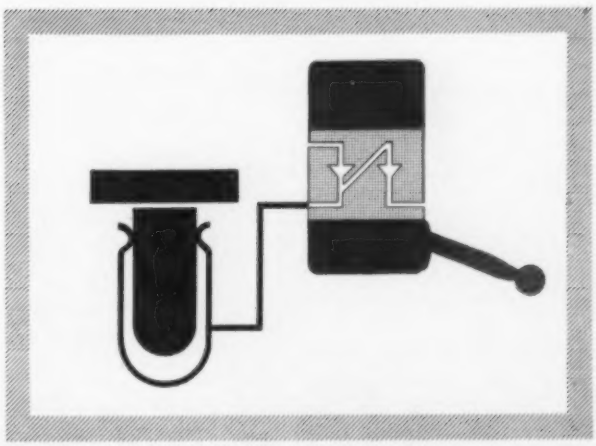

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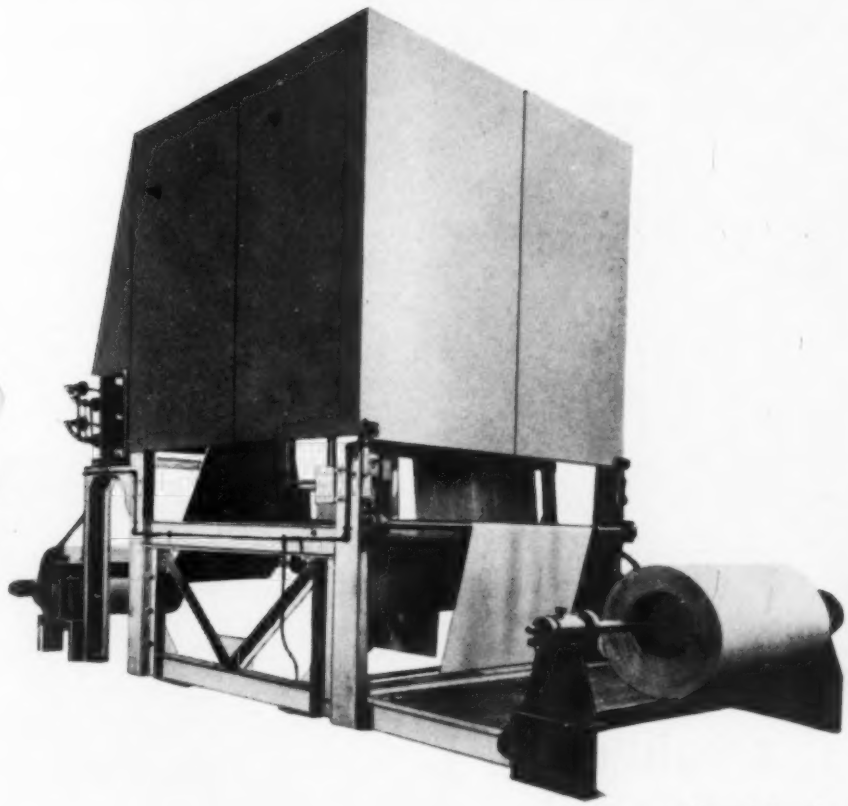

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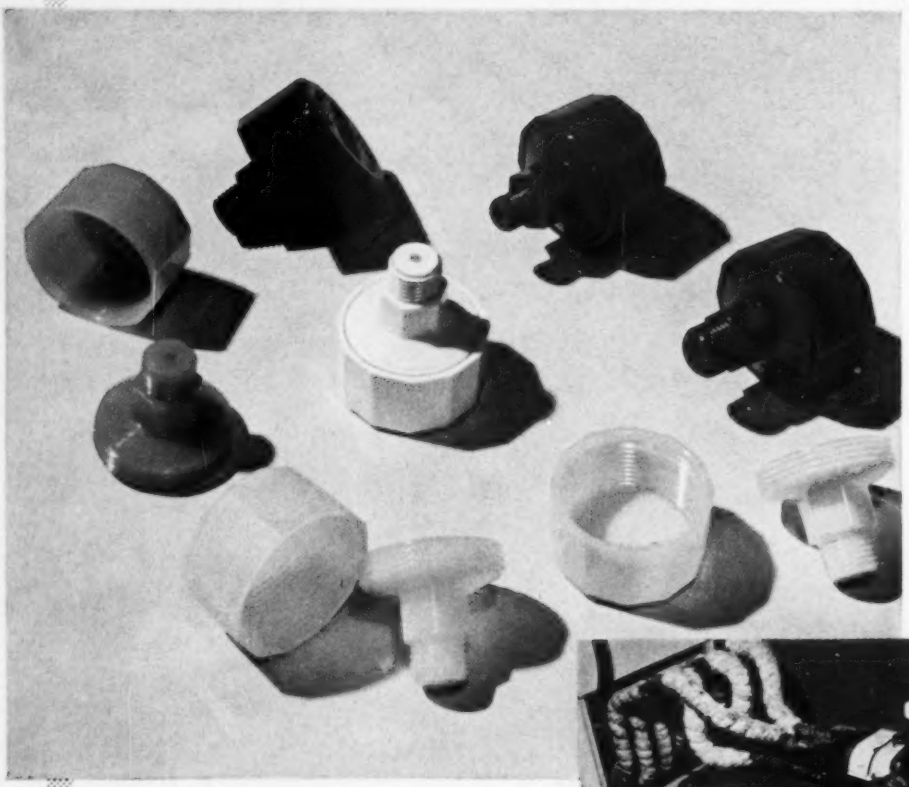
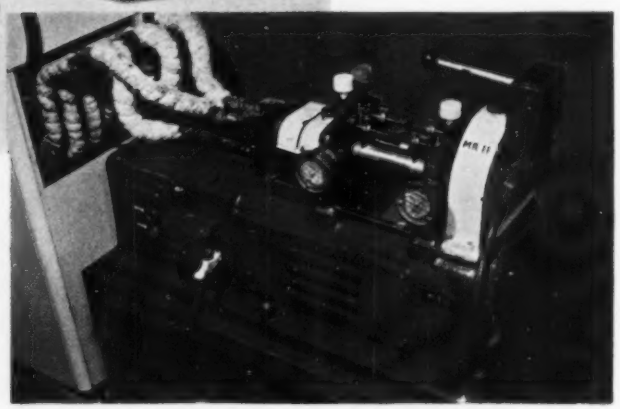


Stauffer Lubricators injection moulded by Trendon Ltd., Old Malton, Yorks, from 'Maranyl' I.C.I. nylon. The colours help operators to identify grease-points.

Stauffer Lubricators made from 'Maranyl' I.C.I. nylon in position. These simply-designed lubricators do not unscrew through vibration and are coloured for easy identification.



'Maranyl' keeps a tight grip on grease-points

These neatly designed Trendon Stauffer Lubricators are injection moulded from 'Maranyl' I.C.I. nylon. 'Maranyl' was chosen in preference to steel or brass, because its natural elasticity makes the screw threads grip much more firmly, eliminating the springs or catches which the vibration of the machine usually makes necessary. 'Maranyl' is available in various colours, which make each grease-point easily identifiable. This is just one of many extremely tough, accurately detailed mouldings that are being produced from 'Maranyl'. These mouldings are not only oil and grease resistant, but light in weight, and resistant to vibrational fatigue. As moving parts, they are silent in operation and need no lubrication.

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'Maranyl'

'Maranyl' is the registered trade mark for the nylon compounds manufactured by I.C.I.

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RUBBER and PLASTICS WEEKLY

Formerly 'Rubber Journal and International Plastics'

Volume 140 *IN ITS 77th YEAR* **No. 19**

May 13 1961

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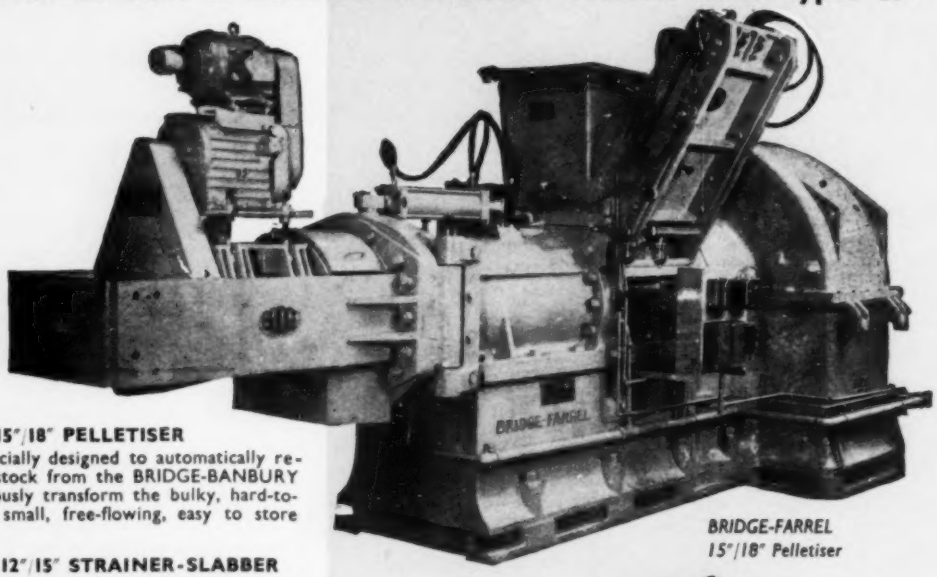

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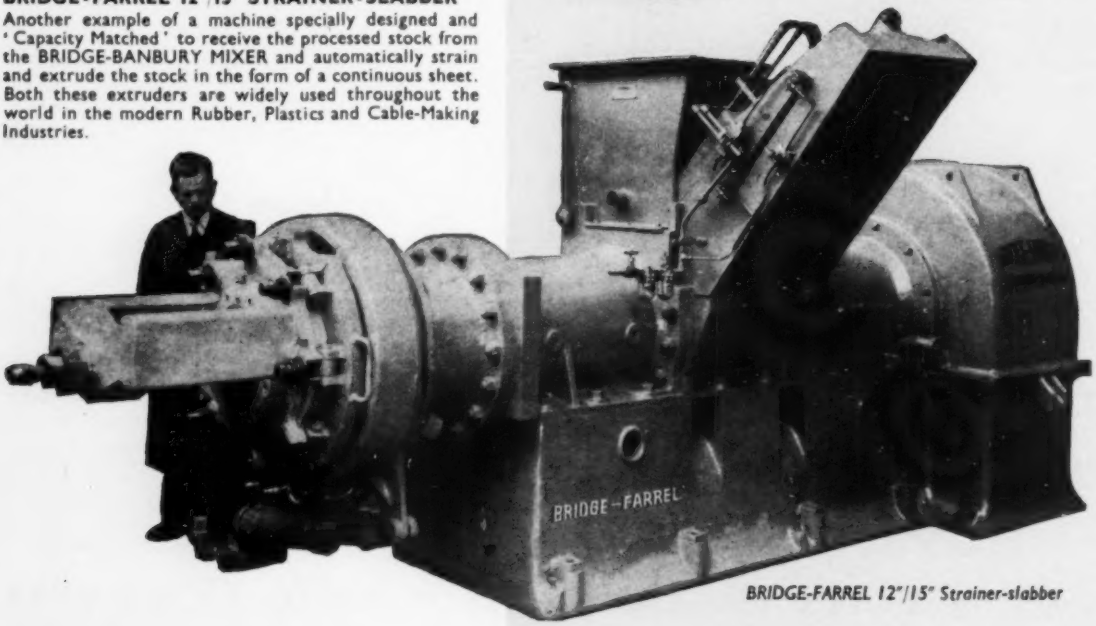

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NOTES of the WEEK

Safety at Scarborough

AS this issue is published, many safety officers in the polymer industry will be in Scarborough, attending this year's National Industrial Safety Conference. As a whole, the conference will not be feeling particularly complacent. In spite of increased safety efforts, provisional Ministry of Labour accident figures show that there was an increase in both non-fatal and fatal factory accidents in 1960, as compared with 1959. Non-fatal accidents rose by 15,931 to 189,404, while the fatal figure went up by 67 to 665.

One of the main purposes of the conference, which is organized by the Royal Society for the Prevention of Accidents, is to improve the techniques of industrial safety officers in their efforts to reduce accidents, and the programme contains a number of interesting papers. Two, incidentally, are being given by people well-known in the polymer industry: G. H. Beeby, chairman of British Titan Products, is giving a paper called 'Safety Begins in the Boardroom', and J. Howlett, general manager of the Hull site of the Distillers Co. Ltd., one on 'Safety with Solvents'.

The title of Mr Beeby's paper shows the emphasis of some current thinking on safety. Mr Beeby, who has spent 35 years in the chemical industry, takes a particular interest in factory design from the aspect of safe operation and accident prevention. Too frequently in the past the tendency has been to build a factory first, and then to build safety into it. If safety is kept constantly in mind while the pencil is still moving over the drawing board, time, money — and accidents — can be saved.

Installing Attitudes

THE industrial safety officer commands an increasing number of accident prevention devices, ranging from disc brakes for two-roll mills to publicity material. The hardest task of all, however, is not to obtain these and install them, but to install the correct, alert, attitude of mind towards safety. It is one thing to provide protective equipment and clothing, and quite another to make sure that it is used. (Although more is being done to ensure that protective devices do not cut down on the efficiency and comfort of the worker.) And the attitude of mind we are speaking of involves everyone in a factory not merely being safety conscious when the time and place seems to warrant it, but *all* the time, and in *every* place. It demands the same sort of anticipation that a good driver has: the worker must spot the hidden danger in an uneven pile of boxes, the accident in a patch of oil on the floor. Difficult though it is to promote such an attitude, if it was acquired throughout the polymer industry we should see quite a startling drop in the accident rates in certain categories at least, such as simple handling operations.

The 1959 report of the Chief Inspector of Factories showed that the biggest number of accidents in the rubber industry — 520 or 28% — happened during the handling of goods, while this factor accounted for 36% of accidents amongst plastics fabricators. Falls of all description caused 249 or 13% of accidents in the rubber industry, and 80 or 16% of accidents amongst plastics fabricators.

To inculcate this alert attitude is the safety officer's main problem, and to tackle it successfully he needs full management support. If the executive — whether he is works manager or office manager — is safety conscious, then his attitude will tend to rub off on to his department, and break through the feeling 'it can't happen to us'.

Fire Warning

FIRE protection is the theme of one of the papers at the safety conference: unfortunately appropriate, since last year was a very bad one for fires. One of the worst was the disastrous blaze at Dunlop's main mill at Rochdale, which happened just over a year ago. Rebuilding has been completed in a remarkably short time, and the mill will soon be working normally again. An article in a recent issue of *The Dunlop Gazette* tells the story of the fire, not simply as a story, but as a warning. Few people who have not experienced it can imagine how quickly a fire can spring up, spread, and destroy. The article attempts to convey this:

'No-one who had seen the massive bricks and concrete structure would have believed that it *could* have burned. Yet watchers saw solid-metal pillars a foot in diameter buckle and bend under the intense heat. In one place, *some* 35 *yards away from the actual fire*, the heat turned the woodwork of the office to charcoal'.

The article is presented so vividly that it should make the dullest employee more fire-conscious. Both the rubber and plastics industries deal with inflammable materials and the risk of fire can never be discounted. It would be a very good thing indeed if reprints of this article could have a wider circulation throughout the industry.

NEWS *Briefs*

RUSSIANS BUILD SYNTHETIC RUBBER PLANT
CARBON BLACK IN FRANCE — INDIAN STYRENE
PLANT—I.C.I. IN HOLLAND—ISOPRENE PROCESS

●**India** — Polychem Ltd. is to set up a plant for the manufacture of styrene monomer in collaboration with Dow Chemie AG, Switzerland. The plant is expected to go into production by the third quarter of 1962. It is estimated that the project will cost £2.25m. The company has received industrial licences for the manufacture of styrene monomer and for increasing the existing capacity of its polystyrene plant.

●**Spain** — W. R. Grace of New York recently applied for authorization to set up a subsidiary — Darex Española — in Spain for the manufacture of various commodities including synthetic rubber and plastics film, on the Mediterranean coast between Valencia and Barcelona. The capital will amount to 3m. pesetas, entirely from US sources.

●**United States** — The Goodyear Tire and Rubber Co. and the United Rubber Workers' Union have agreed on a new two-year contract providing wages increases of up to 14½ cents an hour for about 20,000 employees in 11 factories. The agreement followed a wage pattern set here in a recent contract between the Rubber Workers' Union and the Firestone Tire and Rubber Co.

●**Bulgaria** — In the 12 months ending March 31 1962, Bulgaria intends to buy rubber worth £300,000 through UK merchants. This is disclosed in the full text of a new Anglo-Bulgarian trade agreement.

●**Holland** — Negotiations have now been completed for the purchase by Imperial Chemical Industries Ltd. of Hollandsche Gummifabrieken Weesp, manufacturers of plastics sheet and film and pvc-coated fabrics. Following completion of the purchase, which is subject to approval of the British Treasury and the Netherlands Bank, the Dutch company will supplement its range of products with similar products now manufactured by I.C.I. in the UK and exported to Europe.

●**Russia** — A new synthetic rubber plant is being built at Stavropol, near Kuibyshev, in the central Volga area, the *Economic Gazette* reports. The new enterprise is part of the petrochemical industry based on the Kuibyshev oilfield. It will be fully automated. Equipment is being supplied not only by the Soviet industry but also by East German and Czechoslovakian firms.

●**Norway** — Askims Gummivarefabrikk, Norway's largest rubber firm, will open an office and storing facilities in Gothenburg, Sweden, next week. Later, the company will establish subsidiaries in Stockholm, Malmoe and Sunsvall.

●**Italy** — The recently-formed joint subsidiary of Albert E. Reed and Co. Ltd. and La Centrale Finanziaria Generale SpA of Milan — SICAR SpA — has acquired the majority of the shares of the Rexim-Bugnone SpA packaging business in Turin. Bugnone has a highly developed plastics division. This is the Reed Paper Group's first operating company in the European Common Market.

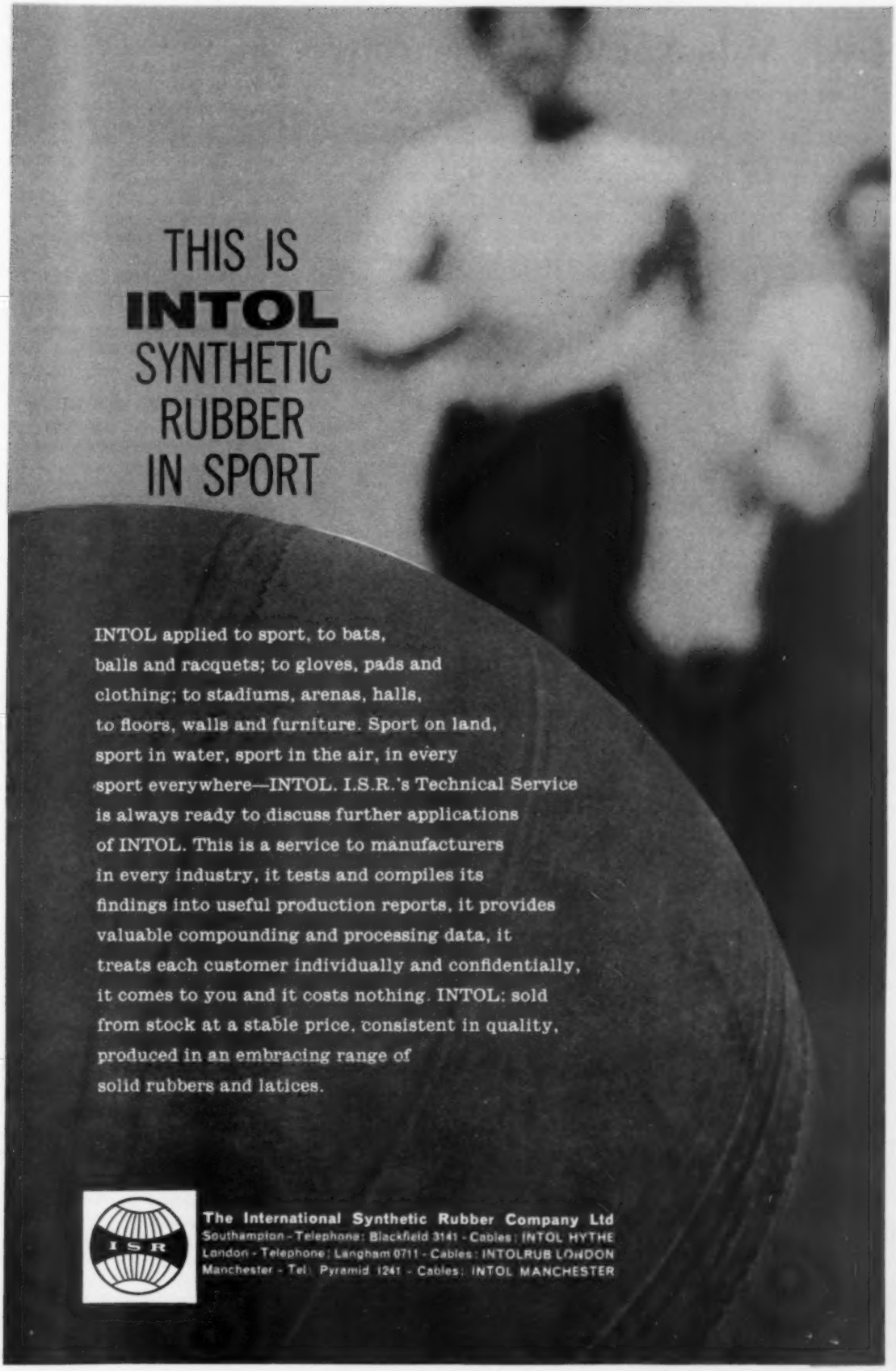
●**Sweden** — The polythene plant to be built near Gothenburg by Union Carbide International Inc. and Fosfatbolaget, will have a capacity of 35m. lb. a year (*RPW*, February 25, 280). It will be completed in 1962 and the capacity will be sufficient not only to satisfy the Swedish market, but also to serve as a source of exports for the Scandinavian area generally. Fosfatbolaget was founded in 1871 and is Sweden's largest electrochemical company.

●**United States** — A pilot plant for the production of a new Du Pont fibre is being constructed at Richmond, Virginia, and is scheduled to be completed late in 1962. The new facility will produce HT-1, a high-temperature-resistant polyamide.

●**France** — Cie Française de Raffinage has signed a contract with United Carbon France under which it will supply the latter company with aromatic hydrocarbons for the manufacture of carbon black. Production of carbon black for French and European consumption will commence soon at the plant at Port Jerome near Le Havre, which is nearing completion.

●**United States** — Goodyear Tire and Rubber Co. has disclosed that a new process for the manufacture of isoprene has been developed. This process will, it is claimed, make possible the production of Natsyn polyisoprene rubber at a maximum cost of 25 cents per lb., which will make it competitive with natural rubber.

'On what grounds do you base this claim for "dirty" money?'—536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GRP Aids Nuclear Research

PLASTICS VACUUM CHAMBER AT HARWELL

'NIMROD', the 7 GeV proton synchrotron now under construction at the Rutherford high energy laboratory of the National Institute for Research in Nuclear Science at Harwell, incorporates a glass reinforced epoxy resin double-walled vacuum vessel through which protons are accelerated until their velocity approaches the speed of light. Eight outer and eight inner sections, each consisting of Ciba's Araldite epoxy resin and glasscloth, will eventually be installed to provide a ring-shaped vessel having a diameter of more than 150ft.

The first 50ft. GRP outer section under test at Harwell

First GRP Structure

Several large proton synchrotrons have been built in leading industrial countries throughout the world, but this is said to be the first occasion on which laminated plastics have been used for the construction of the vacuum chamber. It is claimed to be the largest reinforced structure ever made with matched tools, and the thickness tolerances on the 50ft. sections are less than five-thousandths of an inch.

The special requirements for this vacuum vessel are low rate of gas evolution, high radiation stability and low electrical conductivity. The test programme to decide on the best combination of reinforcement, resin and curing system was exhaustive, and provided useful data on the radiation resistance of reinforced plastics which should prove of great value in the future as nuclear power becomes more widely used.

The satisfactory completion of the project should also do a lot to increase the confidence in reinforced plastics for the manufacture of large structures.

RAPRA AGM

The 1961 annual general meeting of the Rubber and Plastics Research Association of Great Britain is to be held at the Piccadilly Hotel, London, on June 14 at 12 noon. Following the meeting a luncheon will take place at which the guest of honour will be Denzil K. Freeth, MP, Parliamentary Secretary to Lord Hailsham, Minister of Science.

Electricity and Prosperity

The thirteenth British Electrical Power Convention will be held at the Winter Garden, Eastbourne, from June 12-15. The theme of the convention is 'Electricity in the Prosperity and Welfare of the Nation'.

More FBRAM Members

Since April 1, the following companies have joined the Federation of British Rubber and Allied Manufacturers as ordinary members: George Angus and Co. Ltd.; Bank Bridge Rubber Co. Ltd.; A. Cairns and Co. Ltd.; Durable Rubber Manufacturing Co. Ltd.; Lewis Gilder and Co. Ltd.; McCrae and Drew Ltd.; National Adhesives Ltd.; Plus Products Ltd. and Sherborne Rubber Co. Ltd.

R. H. Cole and Co. Ltd. and Revertex Ltd. have joined as associate members. A list of members under FBRAM's direct membership scheme was published in *RPW* March 25, 454.

Laporte in Australia

Following the report last December that a £3½m. plant for the manufacture of titanium oxide was to be built at Bunbury, Western Australia, Laporte Industries Ltd. announce the formation of a new company.

This is to be called Laporte Titanium (Australia) Pty. Ltd. R. I. Ainslie, QC, has been appointed chairman of this company and other directors include N. G. Humphries, W. S. Duffield, G. Hickson and W. Woodhall.

Toys for Russia

Cascelloid Ltd., a member of the British Xylonite group, has received a Russian order for £3,500 worth of dolls and plastics toys. It is the company's first order from Russia.

Goodrich Develops Nitrile Propellant

A SIGNIFICANT American development in solid propellants that will reduce the weight of rocket motors and increase energy output about 6%, is already claimed by B. F. Goodrich Aviation Products.

The new propellant is a mixture of Hycar nitrile rubber with 'high energy compounds', and is said to be more dense than previously developed high energy solid propellants.

Development tests show that the propellant has a 15lb./sec. increase in impulse over present rubber-based fuels. It has been produced at Goodrich's Rialto, California, plant, and is said to be superior to nitrocellulose-containing propellants in ageing stability, in ballistic and mechanical properties over a wide temperature range from −110° to 250°F., and in other bonding and handling characteristics. All of the materials used in the formula are reported to be commercially available in quantity.

The fuel has important applications in anti-aircraft missiles, the upper stages of ballistic missiles, and high-mass-ratio motors for space probe and satellite missions.

Tyre Factory Strike

A strike by 88 men in the finishing department of the India Tyre Company's factory at Inchinnan, Renfrewshire, earlier this week brought work almost to a standstill. The men are asking for an improvement in working conditions.

Plastics Exports Up

UK exports of plastics materials in the first quarter of this year were 5,434 tons more than the same period in 1960. Imports were 2,861 tons down.

The Soviet Union took the largest single quantity of materials during March — 1,271 tons.

Full figures: page 731

Cellular Polymers

JOINT IRI/PI CONFERENCE ON EXPANDING FIELD

MUCH has been written and spoken in the last few years on the thin dividing line between rubbers and plastics and the two industries seem to be gradually growing closer together and merging into one. In no single field of application perhaps is this more apparent than in the sphere of expanded materials where natural and synthetic rubber and plastics foams are competing with each other and are also, by virtue of their complementary properties, making possible the use of foams over an extremely wide range of applications.

Frequent Joint Meetings

In accordance with this general trend the occurrence of joint meetings of the Institution of the Rubber Industry and the Plastics Institute is becoming more frequent. The most recent of these was a conference organized by the London sections of the two institutes on May 5 on foamed rubber and plastics.

In view of this, the choice of Dr W. F. Watson as chairman of the conference was a very fitting one. As director of research of the Rubber and Plastics Research Association, such joint conferences must be of considerable satisfaction to Dr Watson and the association, as they afford an opportunity to make contact with potential members and emphasize the value of a joint research association.

Dr Watson, in his opening remarks to the conference delegates, commented on the choice of himself for the task and modestly said that while he felt he knew enough about the subject to keep his head above water, he was not likely to steal the limelight from any of the speakers or, as he put it, to 'hog the discussion'.

Latex Permeability

The first paper was read by K. O. Calvert, Dunlop Rubber Co. Ltd., and was entitled 'Permeability of Gelled Latex Foams'.

In the preparation of latex foam rubber, he said, the foam rubber at the point of gelling normally consisted of discrete or non-communicating cells. These cells must subsequently become inter-connecting, in other words, permeability must be induced, if the vulcanized foam rubber was to have a satisfactory structure.

He described an apparatus and method developed in the Dunlop research centre for the determination of the permeability to air of gelled latex foams. This consisted quite simply of a mould which could be filled with latex foam, fitted with a tube through which air could be passed and a manometer to determine the pressure in the tube. Air was passed through at a rate of 0.7cc./sec., a pressure difference of 20cm., indicating 100% permeability and a zero pressure difference indicating complete impermeability. By recording the pressure over a period of time and in another vessel measuring the change of pH values of an identical latex foam sample the extent and time of induction of permeability could be correlated with the structure of the foam rubber product. Mr Calvert produced the results of tests on various gelling systems, showing that to produce a satisfactory foam structure it was necessary for permeability to be almost complete before the commencement of vulcanization. He also discussed the significance of soap, zinc oxide and pH with respect to permeability. The tests described had been carried out on both natural rubber latex and on a butadiene styrene high solids latex, and although no natural/synthetic blends had been tested, Mr Calvert expressed the opinion that these would be intermediate between the two.

One anomaly discovered by the use of this technique was that the use of stearate soaps produced impermeable structures without the splitting of the foam which would have been expected from the results with castor oil soaps or potassium oleate.

Polyurethane Foams

The paper which followed, on polyurethane foams by J. M. Buist, I.C.I. Ltd., was undoubtedly one of the highlights of the conference. Quite apart from his interesting subject matter, it was obvious from his easy delivery, that Mr Buist had done this sort of thing before. Despite the fact that he overshot his allotted time it was a pity that he could not have been allowed to continue, even at the expense of the lunch break.

He outlined briefly the history of the development of polyurethane foams since their invention by Bayer chemists in 1938. The first products were rigid materials, followed in about 1950 by the flexible foams in Germany, introduced in this country by I.C.I. in 1956.

The development in Germany and the USA had, he said, shown a different pattern to that in this country where the emphasis had been on the development of low toxicity isocyanates to allow the *in situ* spraying of foams without the need for special precautions.

Two Processes

There were, said Mr Buist, two methods of producing flexible foams. The one-shot process where a polyester or polyether and the isocyanate were mixed in the correct proportions, and the prepolymer process in which the polymer was mixed with an excess of isocyanate to form an intermediate which could be reacted subsequently with water to produce the foam structure. There were some advantages inherent in the two-stage process, due partly to the lower temperatures developed during the curing process, which resulted in foams with more uniform properties. Because of the increased opportunities of introducing variations in the two-stage process, it was possible to produce foams with a wider range of properties than by the one-shot method. One particularly attractive feature of the two-stage foams was their compression characteristics where unlike some one-shot materials, they exhibited no 'bottoming' — an important consideration for cushioning applications.

Mr Buist described at some length the present applications of both rigid and flexible foams, one of the more recent of which was becoming of some significance. This was the use of flexible foams in conjunction with fabrics, to produce 'foambacks' which were likely to have considerable impact on the clothing field. The foam was attached to the fabric either by the use of an adhesive or by thermal degradation of one surface of the foam which was then immediately brought into contact with the fabric. The latter method, although rather tricky to control accurately, was preferable as the use of adhesives introduced some stiffness into the product. By the use of a composite foam/fabric it was possible to make very light warm clothes with improved handle and crease resistance and to improve

LIGHT COLOURS IN A BRIGHTER WORLD

"RAINBOW" PROBLEMS

The demand for lighter and brighter colours in manufactured articles has been one of the more apparent trends in recent years. Domestic appliances, such as washing machines, refrigerators and vacuum cleaners, appear in an ever widening range of attractive colours. The same applies to car body paints and plastics, while other important applications include PVC sheathing on rubber insulated cables and white sidewalls on tyres. One result of the growing use of rubbers in contact with these light coloured surfaces has been the increased attention given to the problem of migration staining.

As applied to the properties of antioxidants, the term 'non-staining' refers, in its simplest connotation, to the freedom from discoloration of light coloured rubber articles when exposed to light. A somewhat broader definition would include migration staining, in other words, the staining of materials brought into contact with rubbers.

The relevance of non-staining antioxidants in connection with the problem of migration staining is not necessarily immediately obvious. There are, in fact, some circumstances in which a 'staining' antioxidant could be used, for there are applications in which the rubber article need not be light in colour. A case in point is the use of black rubber grommets in motor cars, by no means an untypical example. But even though the 'staining' antioxidant be chosen with considerable care, there must remain a lingering doubt as to the wisdom of using it in any application of this type. It may well be that tests have not shown any deficiency but the query remains as to whether this would be true under service conditions and over a long service life. It is considerations such as these that highlight the relevance, and the importance, of non-staining antioxidants since they bring to the problem a more positive solution.

There are various ways in which rubbers can be tested for migration staining but, because the conclusions arrived at must to some extent be arbitrary—depending as they do on the test conditions chosen—an attempt must be made to standardize the testing procedure. There are more ways than one of achieving this uniformity. I.C.I., for example, test their Nonox range of non-staining antioxidants according to the test procedure laid down by the American Society for Testing Materials. Two tests are used:

ASTM. D. 925-55, contact staining.
ASTM. D. 925-55, migration staining.

From the very wide range of materials that can be placed in contact with rubber, the Company has tested no more than a relatively few selected examples. Unless, however, the actual material that is encountered in service has been used in the test, it is not safe to assume that a particular antioxidant would be suitable or, for that matter, unsuitable.

Plasticized PVC has been found particularly sensitive to migration and is used for routine purposes. Nonox WSL, for instance, has given rise to definite discoloration against plasticized PVC and also linseed oil paints. Against other dry materials the danger of migration staining seems less but may not be insignificant in some cases. By and large, over the broad field of application, non-staining antioxidants—such as EX, EXP, WSL and WSP from the Nonox range—are more acceptable than staining antioxidants. It is only reasonable, however, to emphasize that check tests should be carried out and separate consideration given to each individual application.

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considerably the stability of light knitted fabrics.

Polystyrene

W. B. Brown, Monsanto Chemicals Ltd., then delivered a paper on cellular polystyrene in which he described the three grades of expanded polystyrene commercially available from his company. These were a general purpose grade, a fire resistant type and an oil resistant copolymer. All of these were manufactured from beads approximately 0.3mm. in diameter and the finished foams could be divided into two categories depending on whether heat was used to expand the beads before moulding or not. The materials could be injection moulded and it was also possible to extrude sheets of foam.

Two methods for rendering the material fire resistant were mentioned by Mr Brown. Either a resistant coating could be applied after moulding, or chemical additives could be incorporated in the raw polymer beads.

Among the useful properties attributed to these cellular polystyrenes were low thermal conductivity, water vapour penetration and absorption; low cost; easy processability; good low temperature properties; high rigidity and strength to weight ratio; reasonable resilience; good dielectric properties and fully closed cell structure. They had found numerous applications in many industries, particularly building and refrigeration but were also being widely used in packaging, toys and display work.

Flexible Foam Developments

The first lecture of the afternoon session was given by S. B. Cant, Lintafoam Ltd., and was on new developments in flexible foams.

Mr Cant commenced by saying that the developments in this field over the last few years had been so numerous that he proposed to confine his remarks to latex foams and polyurethanes.

The most interesting and important development in the latex field, said Mr Cant, was the availability of improved high solids content SBR latices which could be used in blends with natural rubber latices to give improved properties and a more stable price.

Blends of this type had better properties but lower wet gell strength, but the incorporation of improved types of filler could produce very satisfactory foam materials which were finding many uses, particularly for carpet backing and in conjunction with other fabrics.

He then discussed new applications for flexible and semi-rigid urethane foams, including the production of mouldings by the *in situ* foaming of a urethane in a skin of plastics formed by rotational casting or vacuum forming. This technique was finding favour in the motor industry for the production of fascia and crash panels and arm rests using formed pvc or ABS skins.

Mr Cant then endorsed the opinions which had been expressed by Mr Buist on the future potential of foambacks in the clothing industry and passed an example of the technique round the audience. This was a very handsome overcoat made from a knitted nylon fabric with a foam backing which weighed only 2lb. and had given two years of very satisfactory service.

Flexible pvc

I. D. Maxton, Elson and Robbins Ltd., described methods of production of flexible pvc foams. These could be produced either with open or closed cell structures and foaming could be achieved either by chemical or mechanical methods. Chemicals could be incorporated in the plastisol which gave gaseous reaction products, such as an isocyanate and water, or a gas inert to the plastisol could be adsorbed which was released on increasing the temperature to cure the pvc.

Most of the methods described relied on a pvc plastisol, and Mr Maxton discussed the required properties of this and their effect on the processing and the final product. The processing technique could, he said, be varied to give foams with a wide range of properties giving a multiplicity of uses and major applications included upholstery and padding. Because of the ease with which pvc foams could be RF heat sealed they were ideal materials for laminating to other materials.

In his lecture on expanded ebonite A. Cooper, Expanded Rubber Co. Ltd., said that although ebonite was known over 100 years ago, expanded ebonite was a product of the 20th century and, in fact, until about 20 years ago was made in a somewhat primitive manner. He outlined the present manufacturing methods, described the high pressure physical expansion process and dealt with the general physical properties of expanded ebonite with particular reference to its low temperature properties and with its principal applications.

He also made reference to the remarkably long life of expanded ebonite in a variety of applications, showing the contribution that it had made for low temperature insulation and for buoyancy applications.

Although the six lecturers were all describing a different foamed material and all of them understandably extolled the virtues of their own particular product, it was emphasized by nearly all of them that, while in some markets different materials were in direct competition, the wide range of properties obtainable with different products made them complementary materials which could between them satisfy the demands of an enormous number of potential users.

Export Centre

A residential centre for export studies is being opened in June for top management at Sundridge Park, Kent.

Organized by the Sundridge Park Management Centre, in consultation with a special advisory panel set up by the Federation of British Industries, it will provide intensive training at top level for Britain's exporting firms. Courses will last for three weeks and will be repeated at regular intervals throughout the year.

The Harrington Alpine incorporates a glass fibre polyester hardtop manufactured from Artrite formulated resin. This method of construction allows a light, strong, streamlined structure to be economically produced

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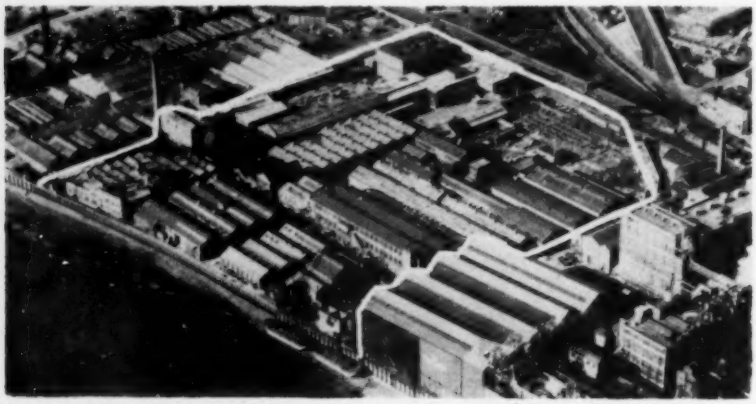
Silvertown Produces Polyether

NEW VENTURE BY THE BTR GROUP

A NEW polyether foam cushioning material is to be made by Microcell Ltd., a member of the BTR group. This is to be launched on June 1 1961 under the trade name Crestafoam and is designed to meet the standards of comfort demanded by the upholstery, bedding and automobile industries.



An aerial view of the BTR factory at Silvertown, part of which will be devoted to the manufacture of Crestafoam polyether foam

To meet these high standards, a completely new factory has been built at Silvertown, and the plant installed incorporates many of the latest developments in electronic metering and control devices. It has a potential capacity of 16,000 tons a year.

Expanding Market

The use of polyether foams for comfort cushioning has been widely accepted by the industries mentioned above and this has become an important sector of the expanding British plastics industry. Although no official statistics of polyether foam production exist, market research carried out by Microcell has shown that the 1959 production was 8,000 tons and this was almost doubled in 1960 when the figure was 15,000 tons. Estimates for the 1961 production indicate that the figure will probably reach 20,000 tons, especially in view of the brightening prospects in the major user industries.

Polyether foam, the usage of which Microcell expects to increase at the expense of latex foams and other conventional cushioning materials, has certain attractive properties. It is said to be lighter and stronger than latex foam. It is odourless, and resistant to detergents and dry cleaning chemicals and can be stitched, stapled or fastened by any common method. Four grades are to be manufactured at Silvertown suitable for varying applications.

Crestafoam CF.20 (Supersoft) is intended for use for pillows, bolsters, headrests, mattress toppers and other applications where softness is essential. CF.24 (soft) and CF.30 (medium) are grades designed for comfort cushioning for furniture and transport applications. These grades will bear the seal of the British Cellular Rubber and Plastics Manufacturers' Association.

Foams bearing this seal are required by the Association to comply with the minimum requirements laid down in a specification written to maintain the standards of foam intended for seating applications (*RPW*, January 28, 124).

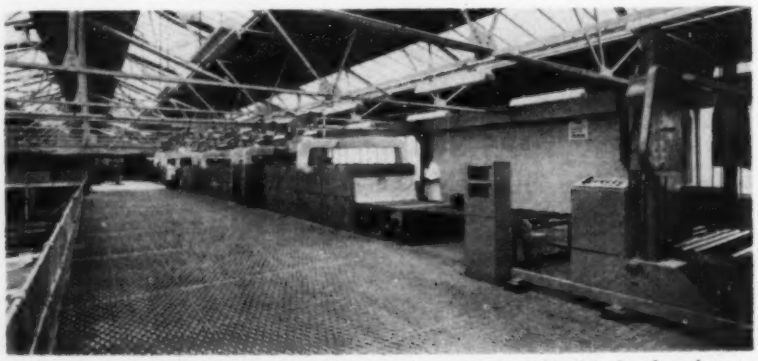
Crestafoam CF.37 (firm) is a heavy duty foam designed for those cushioning applications which are likely to suffer excessive wear and this grade is therefore designed to absorb repeated shocks and considerable pressures.

Broadening Interests

This entry of Microcell into the flexible foam field adds to the already considerable investment of the BTR group in the whole range of plastics products. The Microcell research and development laboratories at Camberley are engaged in the development of new plastics materials for application in a wide range of industries, and this programme is backed by the BTR group research laboratories in other parts of the country.

BTR started life in 1924 as a direct manufacturing and marketing offshoot of B. F. Goodrich, concentrating on the production of tyres and other rubber goods. In 1956 tyre production was discontinued so that the group's resources could be fully devoted to a wide range of industrial rubber products.

Several other companies have been acquired by the group to increase further the range of products manufactured. One of these acquisitions was James Lyne Hancock Ltd., founded by Thomas Hancock in 1820, thus connecting BTR with the very beginnings of the rubber industry.



A view of a section of the new polyether foam plant. Visible in the picture are the curing and drying ovens and some of the electronic control equipment

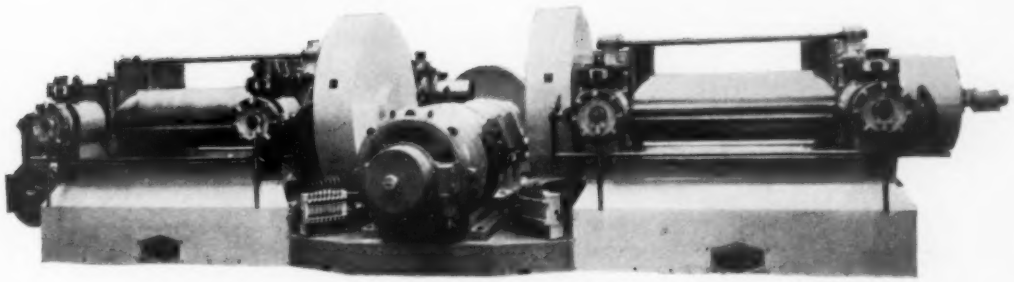
Reinforced Plastics

A more recent diversification was the acquisition of Microcell, Glass

Continued on page 722

ROBINSON

SPECIALIST ENGINEERS TO THE RUBBER AND PLASTIC TRADE



A new Standard Design 22″ x 60″ Twin Mill arrangement on a Cast Iron Combination Vibro Mounted Bedplate with 200 H.P. Central Drive having a Spiral Bevel Helical Reduction Unit and Motor with Plug Braking Reversing Contactor Control and Lunn Type Low Position Safety equipment.

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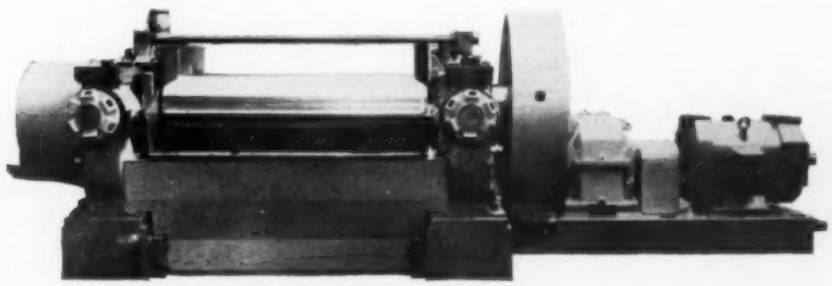

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Rubber in Central Germany

DEVELOPMENT OF THE INDUSTRY IN THE FIFTIES

By DR ERNST PREIN,
Economic Editor, *Kautschuk und Gummi*

ALMOST 80% of the capacity of the former German Reich for the production of rubber goods lies in the territory of the West German Republic and in West Berlin, and only 20% in Central Germany and in East Berlin; in the German territory east of the Oder-Neisse line there is practically no production of rubber goods.

In the German Reich in 1938 about 250,000 metric tons of rubber goods were produced; of this about 50,000 tons were produced in Central Germany and East Berlin. In 1959 in Central Germany and East Berlin about 120,000-140,000 tons of rubber goods were produced.

Official data on the total production of rubber goods in Central Germany were not given. It is only possible therefore to estimate probable production, based on the observation that rubber goods production amounts to 2.4-2.5 times the amount of new rubber introduced. The figures in Table 1 in 1,000 metric tons are given for new rubber.

TABLE 1

	Synthetic[1] Rubber	Natural[2] Rubber	Total
1950 ..	21.3	2.0	23.3
1955 ..	33.5	9.5	43.0
1956 ..	33.7	9.7	43.4
1957 ..	32.4	16.5	48.9
1958 ..	37.0	17.0	54.0
1959 ..	39.5	15.5	55.0

[1] Production minus export—nothing is known about imports.
[2] Imports, nothing is known of exports.

Whether the quantities of new rubber calculated as 'available' in each year were actually worked up, is not known, since the movements of stores are not known. But the movements of stores cannot affect the order of the figures. By 1965 rubber goods production should have increased to about 360,000 to 420,000 tons.

Rubber goods production was narrow in scope during the first years after 1945. The quality of the products also left something to be desired for some years. Even today the world standard, generally speaking, has not yet been reached. This is attributable in particular to lack of equipment and machines, and control and measuring apparatus.

Variety of Products

Tyres, sponge soles, sponge, printing cloths for bookprinting, harvester cloths, tarpaulins, sprayed rubber elastic threads, rubber-metal bonds, foamed rubber, technical roller coverings and hard rubber linings were produced as well as a large number of foamed articles and hand worked products.

Tubes with and without linings made from plastic rubber combinations will be developed and also flame resistant foam rubber, rubber conveyor belts for hot goods with heat — cold — and tropical resistance, special rubber protective clothing, seamless dipped radio sounding balloons, porous plastic/rubber articles such as bathmats, foams, etc., rubber containers for transport, high pressure tubes (up to 1,500 atm.) narrow — wide — and V-belts and various latex articles. The production of foamed rubber will be enlarged by the construction of a factory in Neubrandenburg.

Tyre Statistics

Statistical data are available in a limited field only for the tyre section. Tyre production has developed as shown in Table 2.

The expansion of the rubber industry has a close connexion with increasing industrialization, mechanization of industry, mining and building, the growing number of tractors in agriculture and finally motoring, about which some data can be given. In Central Germany and East Berlin the following numbers of motor vehicles were in operation (for comparison, we give the number of motor vehicles on July 1 1936):

	1936	1959	1960
Private cars	240,000	130,000	135,000
Trucks ..	64,000	130,000	135,000
Omnibuses	4,000	3,800	4,000

While the number of private cars is today only half as high as 25 years ago, the number of trucks has doubled since before the war. For comparison: In Great Britain in 1960 there were 10 people to one private car; in Central Germany 124 people. Vehicle production developed as shown in Table 3.

In contrast to the very low degree of motorization as regards private cars, the degree of motorization for trucks is distinctly higher. At the beginning of 1960 there were 128 inhabitants to one truck, compared to 89 in Western Germany and 40 in Great Britain.

Retreaded Tyres

Tyre production for trucks is insufficient. For this reason, the Chairman of the State Planning Commission of the German Democratic Republic issued on March 25 1960 regulations for the submission of truck tyres for retreading according to which practically all users were obliged to submit their used truck tyres for retreading. Slow running trailers for freight delivery (up to 20 km/h) and rubber tyred carts could be fitted initially only with retreaded or repaired tyres.

The value of the gross production in the rubber and asbestos industries of Central Germany in 1959 amounted to 1.67 Milliards of Ostmark in fixed Plan-prices or to 1.17

TABLE 2
TYRE PRODUCTION IN 1,000

	Cycles		Motor Vehicles[1]	
	Covers	Tubes	Covers	Tubes
1950	240	330	468	514
1955	4,844	4,180	1,439	1,345
1956	4,455	4,598	1,743	1,715
1957	4,505	4,194	1,739	1,496
1958	4,755	5,386	1,980	1,750
1959	4,988	6,316	2,369	2,038

[1] Including solid rubber and other covers.

TABLE 3

	Private Cars	Trucks	Motor Cycles	Motor Scooters	Mopeds	Bicycles
1936	60,849	19,061	54,196	—	—	399,000
1950	7,165	1,003	9,607	—	—	338,000
1955	22,247	14,191	61,141	8,014	19,000	724,000
1956	28,145	17,201	68,246	11,055	102,000	694,000
1957	35,597	15,481	77,024	16,100	130,000	587,000
1958	38,422	15,741	81,202	20,894	152,000	592,000
1959	52,684	14,657	87,019	30,000	161,000	611,000

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Milliards of Ostmark in effective factory prices. Having regard to the central administration system in Central Germany, these values cannot be recalculated in terms of market prices in the Western world.

The available data concerning external rubber trade (including inter-zonal trade) are very meagre. In 1959 (1958) 149,200 (85,500) truck tyre covers were exported and 28,700 (66,100) were imported. In addition it is known that in 1959 (1958) 737,400 (704,100) cycle tyre covers and 977,600 (408,500) cycle tyre tubes were exported.

The Central German synthetic rubber production rose from 39,804 tons in the year 1950 to 72,226 tons in 1955 and 86,294 tons in 1959. The exports of synthetic rubber rose from 18,521 tons in 1950 to 38,729 tons in 1955 and 46,854 tons in 1959. The greatest part of these synthetic rubber exports were sent to the Eastern bloc.

Employees

42,093 workers and staff (excluding trainees) were employed in the Central German rubber and asbestos industry on December 31 1959. Of these 29,401 were production workers, 16,214 female co-workers and 291 home-workers. The average monthly income of workers and staff (without trainees and home-workers) reached 511 Ostmark in state owned centrally directed factories of the rubber and asbestos industries.

Production workers earned on the average 549 Ostmark per month in state-owned centrally directed factories and 502 Ostmark in state-owned locally directed factories. Data on the earnings in semi-state and privately-owned factories were not provided. The wages in the rubber and asbestos industry rose by almost 30% compared with 1958. How much of this 30% corresponds to real increase of earnings cannot be determined, since the structure of production is subject to changes from year to year and there are possible alterations in statistical basis of the wages.

In the Central German rubber and asbestos industry there were 104 factories on December 31 1959. Of these 44 were state-owned, 16 semi-state-owned and 44 private undertakings. How insignificant in fact is the share of private undertakings, can be seen from the data employed persons and gross production. Of the 42,093 workers and staff, 39,772 were employed in the 44 state-owned factories, 1,022 in the 16 semi-state-owned factories and only 1,299 in the privately-owned factories. Of the total production (1,671m. Ostmark) in 1959, 1,630m. Ostmark were accounted for by the 44 state-owned factories, 22m. Ostmark by the 16 semi-state-owned factories and only 20m. Ostmark by the 44 private factories. The share of private factories in the total production of the rubber and asbestos industries in 1959 thus amounted to only 1.2% (1.6% in 1958 and 2.2% in 1957).

Plastics Education

The Plastics Institute conference on education and training in the plastics industry, to be held from June 19-20, will include a paper by N. I. Basov, Dean of the Faculty of the Moscow Institute of Chemical Machine Construction. The title of Mr Basov's paper is: 'The Training of Engineer/Mechanics for Machines and Apparatus for the Plastics Industry'.

Registration forms for this conference are available from the Secretary, 6 Mandeville Place, London, W.1.

Airhouse Stand

One of the exhibits at the Indian Industries Fair at Delhi in November will be a huge nylon airhouse, showed by British Nylon Spinners Ltd.

The company will use the house to display a hundred different articles made from nylon yarns. These will include a range of conveyor belting.

SILVERTOWN PRODUCES POLYETHER

Continued from page 718

Yarns and Deeside Fabrics and Artrite resins, representing an entry into the reinforced plastics field. The group was already firmly established in the thermoplastic field and is one of the largest manufacturers in the UK of pvc belting, pipes and hoses. Another pvc product is Plasticell, an expanded rigid plastics material which finds many applications in the building, aircraft, refrigeration and allied industries.

Tensile-strength tests being carried out in the Microcell control laboratory at Silvertown

A Twist in Time

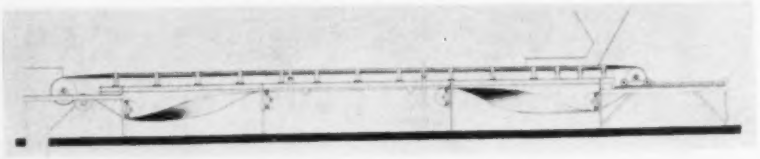
CONVEYOR BELT DEVELOPMENT PATENTED BY GOODRICH

A PATENT covering the latest 'twist' in conveyor belts has been issued to B. F. Goodrich Industrial Products Co. by the US Patent Office.

P. W. Perdriau, president of the BFG division, said that the newly-patented 'turnover' conveyor belt system allowed belts to twist themselves automatically, reversing top and bottom surfaces after delivering and before accepting a new load.

'The object of the turnover action is to position the clean side of the belt on top of the return idlers. This prevents build-up of tacky material on idlers or pulleys, accumulations which can damage idler equipment and shorten belt life', Mr Perdriau said.

The twisting action is accomplished by placing two twist pulleys at each end of the belt flight. Each set of twist pulleys turns the belt 180°. The belt's thick carrying cover is always positioned to receive the load and the return idlers contact only the clean side of the belt. The system can be applied to any conventional conveyor system now in operation, without altering the conveyor framework. Necessary space for mounting turnover pulleys and accommodating the belt turn is all that is required. The system is recommended by the company for use wherever a conveyor belt handles moist or wet materials such as iron, limestone or wet sand.



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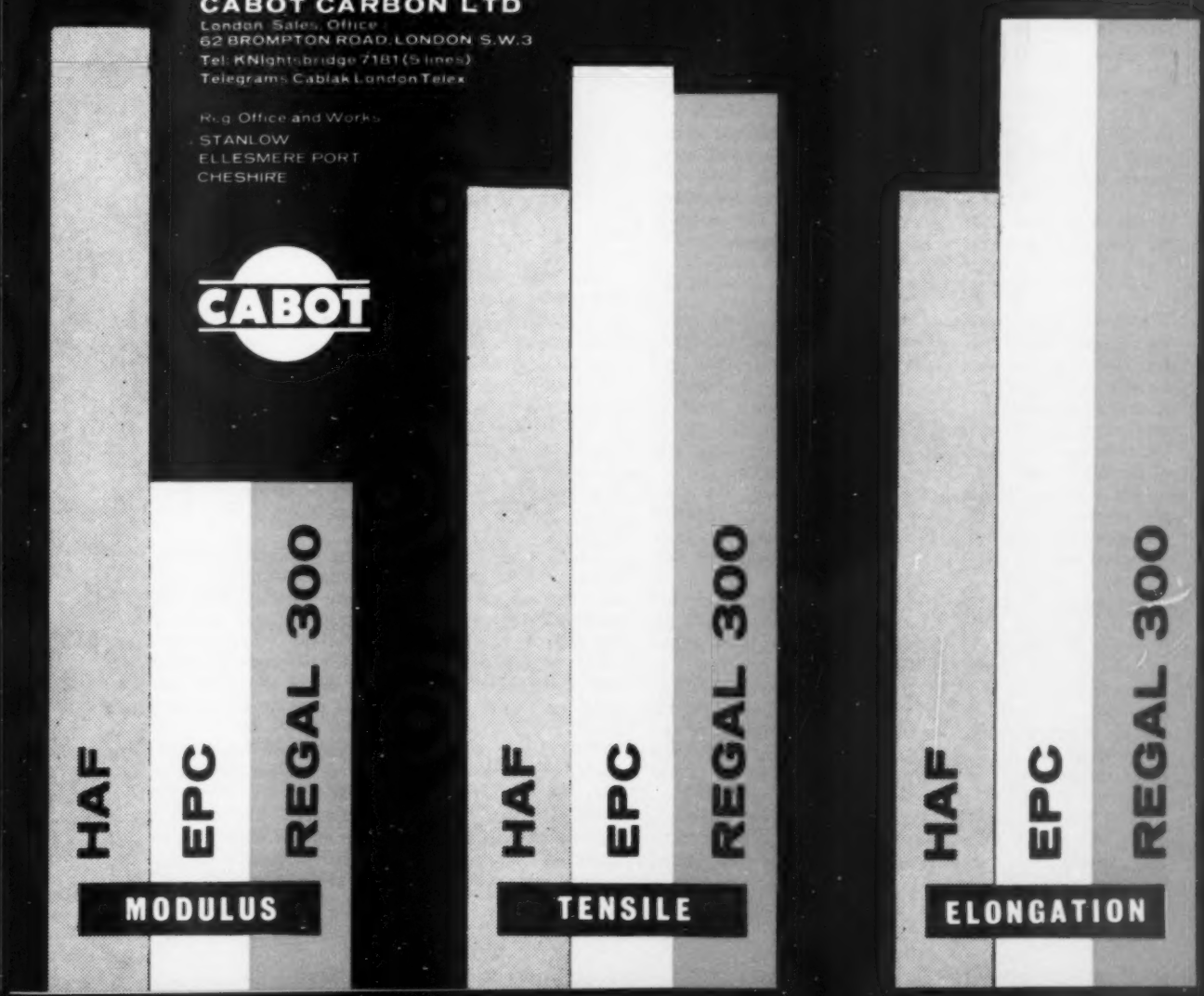


VIEWS *and* REVIEWS

THE March 1961 issue of *Materials Research and Standards* reached the high level of stimulating technical journalism for which I praised its predecessor, *ASTM Bulletin*.

A Misleading Title

On page 230, for instance, F. W. Reinhart, of the National Bureau of Standards, reviewed the US Edition of *Progress in Plastics* 1959, which contains the technical papers presented at the International Plastics Convention held in London in June 1959. It is a very critical, even condemnatory review. A cardinal rule of reviewing is that a book should not be criticised for what it is not trying to do, but rather evaluated within its own set limitations. When, however, the title of a book is as misleading as this appears to be, then the severity of Reinhart's criticism seems to be justified.

'The topics covered by no means include all the plastics subjects in which significant progress was made in 1959 or the immediately preceding period. The papers cannot be considered as reviews of recent developments but rather as discussions of progress in certain aspects of these topics. . . . The uninformed expecting a review of progress in plastics in 1959 will be misled, and the informed disappointed, if they take the title at its face value'.

Why, Reinhart asks, were these papers — which, on the whole, are good in themselves — not published in the usual scientific and technical journals? A group of good papers does not necessarily make a worthwhile book.

Looking at it from the other end, I must say that there is plenty of room in the trade press, in the UK at least, for more and better technical and specialist papers.

A Beautimeter?

I cannot help but admire the brave efforts being made by the ASTM to find objective methods and standards for assessing and measuring those qualities which are usually judged subjectively, that is to say, psychologically if not emotionally. I know that 'one man's meat is another man's poison' and that 'beauty is in the eye of the beholder', but I am sure that the courageous approach of the ASTM will yet achieve something of value.

The look and the feel, the taste, the smell, and even the sound of many of the goods made by our industry are extremely important properties. As long as technologists fear to tread here, others less competent will rush in.

According to *Materials Research and Standards* for March 1961, pp. 208-9, the ASTM Committee E-18 on Sensory Evaluation of Materials and Products is determined to look more closely into this problem. A sub-committee on 'Principles of Psychophysical Testing' has begun to study the 'fundamental physiology, fundamental psychological laws, measuring techniques, design of experiments, and experimental techniques'. Among other things it will be concerned with the effects of environment on the response of the observer to stimuli.

'The Sub-committee on Instrumental Sensory Relationships will collect information on correlations of sensory and instrument measurements, confining its initial activities to the fields of taste and odour'.

'The committee will not confine its work entirely to studies with humans but, where appropriate, will use other living subjects such as insects which have been shown to have definite responses to stimuli that can be measured with instruments'. In this way, substances analysed by gas chromatography can cause a very definite observable response in cockroaches, so that 'a cockroach might quite appropriately act as a transducer in a measuring system, with results comparing with those obtained with a gas chromatograph'.

The Look of the Thing

'Committee E-12 on Appearance has completed a proposed general guide for use in selecting measurement scales and instrumentation for describing such appearance characteristics as glossiness, opaqueness, lightness, and haziness in terms of reflected or transmitted light. This guide does not consider spectral variations responsible for colour, since chemical values of colour often depend importantly on geometric factors'.

'The committee has had under discussion the preparation of a manual on appearance control. This manual is intended to summarize the basic principles underlying appearance, its control, and its measurement. . . . It is hoped to get this project under way shortly'.

'A very active programme is under way on developing test methods for measuring the appearance of typewriter ribbons and carbon papers. In an inter-laboratory test programme just completed, impression transfers from typewriter carbon paper and ribbons were evaluated by six different instruments'.

Bonding of Polyolefines

The usefulness of polyolefines would be increased if they could be successfully bonded, especially to metals, but difficulties have been encountered because they suffer from one of their outstanding advantages, their very inertness. A strong bond would be created if a treatment could be devised (so the argument runs as set out in 'Structural Bonding of Polyolefins' by Baker and Spencer in *I/EC* for December 1960, Vol. 52, No. 12, p. 1015) which would activate the surface of the polyolefin and of the metal so as to cause them to react together. With this achieved, large fields would be opened in submarine cables, printed circuits, and microwave devices of various kinds.

Tacky adhesives are structurally valueless because they are too weak; methods involving oxidation of the polymer surface are better and are commercially used for printed circuits but are not strong enough where a load has to be supported; a PIB interlayer vulcanized to brass under heat and pressure gives a stronger bond because the polythene dissolves in it; metal oxidation has been used by Foord and Taylor to provide an active interlayer.

This paper describes an investigation into a technique giving bonds between copper or copper-rich alloys and polythene via a film of cupric oxide.

At moderately high temperatures, 'the cupric oxide oxidizes the polyolefin surface and is itself partially reduced to cuprous oxide. The polyolefin surface now bearing a high concentration of polar groups can effec-

COMMENT ON SCIENTIFIC AND INDUSTRIAL MATTERS

by **F. C. JENNINGS**

tively serve as its own adhesive by hydrogen bonding and other polar interactions with the oxide film'.

'A satisfactory bond is essentially dependent on three parameters: moulding temperature, moulding time, and thickness of the oxide film'.

Low, medium, and high density polythenes were all successfully bonded in this way, to copper, beryllium-copper, and phosphor-bronze. It is possible also to use commercial bronze (90% Cu) and brass with 85% Cu, but not yellow brass with a copper content as low as 65%.

The technique of producing the cupric oxide film is based on the use of a liquid reagent whose proprietary name is given without — I regret to notice in a scientific paper — further characterization.

Tile Adhesives

An investigation of 51 organic adhesives for the setting of ceramic tiles is reported by Fitzgerald, Wagner, and Bernett on pp. 196-9 of this March 1961 issue of *Materials Research and Standards*. The adhesives were of three main types: Rubber-base or Elastomeric Adhesives, consisting of natural or reclaimed rubber swollen or 'dissolved' in a volatile solvent and often containing compounding ingredients; Resin-base Adhesives: Latices or Polymer Emulsions.

Fifteen sealers were also tested; only seven of them were found to be good waterproofers. It is recommended always to test adhesive and sealer together because of mutual interactions.

A striking and disquieting result of the investigation was the large proportion of the 51 adhesives which did not conform to the appropriate Commercial Standard of the Department of Commerce, even when they claimed so to do. There was no significant difference, as far as compliance with the standard was concerned, between the three types of adhesive.

The original recommendations for the laboratory shear bond strength was 100psi, but a figure of 40psi was finally agreed and incorporated in the Standard. In the light of this investigation, the Tile Council of America urges that 50psi be considered the minimum safe shear bond strength for the installation of ceramic tiles using organic adhesives.

Technical Societies

A final quotation from the same journal, from p. 201, a paper by C. H. Lorig, entitled 'The Role of Technical Societies':

'Societies are being forced by change to widen their scopes; the range of scientific and technical knowledge has extended so greatly within a generation that it is a constant challenge to keep abreast of the trends. The need for a continued fresh approach to the problem is urgent. Methods must be found for adjusting the structure of societies to take account of the specialized and newly-acquired interests of their members'.

When shall we hear what is going on in this way between the two leading technical societies in our industry?

Constructional Plastics

The December 1960 issue of *I/EC*, Vol. 52, No. 12, contains on pp. 1038-42 an excellent annual review by R. B. Seymour of the constructional applications of plastics. After a preliminary (and justified) passage about the continued rapid growth of the plastics industry especially in constructional uses, the author remarks that 'over 200 new test methods and standards have been promulgated by the American Society for Testing Materials (ASTM) Committee D-20, the International Standards Organization, the Society of the Plastics Industry (SPI), the Society of Plastics Engineers (SPE), and the US Department of Commerce'. Then he adds a remark which should be printed in letters of fire and sent to every managing director and the head of every Government department, because it is as good a motto for industrial progress as you will find: 'The co-operation among these groups and industry approaches perfection'.

In such an atmosphere, it is to be expected that things are everywhere on the up-and-up. 'Annual reviews', he says, 'continue to record impressive achievements on all fronts'. Production, new books, exhibitions, symposia, conferences, education, nomenclature, information, all are increasing.

He lists 96 literature references relating to design and engineering, structural applications, reinforced plastics, high-temperature applications, films and sheets, cellular plastics, plastics pipe, corrosion protection, and 12 classes of plastics materials.

A well-written review and a valuable bibliography.

Fifty Years of Plastics

In our issue dated January 28 1961, I reviewed an excellent paper from *Kunststoffe* by Dr H. Saechtling. I am glad to have received a copy of it, amplified and extended, in book form from the publishers, Carl Hanser Verlag of München, under the title 'Werkstoffe aus Menschenhand', price DM6.80.

It deals with the developments over the last fifty years in plastics, synthetic rubbers, and man-made fibres, in their scientific, technical and economic aspects. Its 71 pages of text carry 44 tables of information.

It should be understood that it deals primarily with German developments, but that is not so chauvinistic as might appear, because Germany has indeed contributed a lot to this field. It does, however, make useful comparisons with other countries and it sets its national figures always in a universal context.

I dealt with its contents in such detail last January that I need now do no more than commend it in its new book form especially for its final chapter on the economics of synthetics, with its many valuable tables of data.

RAPRA Translations

Among the valuable services rendered to members by the Rubber and Plastics Research Association at Shawbury is the provision of translations of important technical papers, particularly from the German and Russian technical journals. Among a batch I have just received I was pleased to note three extracts from the book, *Autohesion and Adhesion* by Prof. S. S. Voyutskii. I recently reviewed someone else's rather negative review of this book, so I am glad to have the chance to point out that our own Research Association does better still; it takes the positive view, by selecting the important parts of the book and providing us with English translations of them.

CHARLES JENNINGS

MEN *and* MATTERS

A Review of People and Events

by Peter Richards

SILVERTOWN Rubber Co.'s fine new polyether plant in East London is due to go on stream shortly, but last Friday the company spent a few pleasant hours in looking backward rather than forward. Fifty employees were presented with long service awards — generous cheques and gold watches — by Sir Eric Miéville, chairman of the company.

One of them, 63 years old Albert Charlton, recalled the disastrous night in 1940 when the Silvertown factory was bombed. A shower of bombs scored direct hits on the ebonite shop, trapping five or six girls inside. They were rescued uninjured by Mr Charlton, who was duty officer, and his colleagues.

'The water mains had been hit and consequently burst, the Fire Brigade was elsewhere in the Silvertown area — so we just had to sit there and watch the factory burn', Albert said ruefully.

The awards were not presented in a conveyor belt fashion. G. E. Godfrey, director and general works manager, gave a summary of the achievements of each employee, and the occasion was a model example of how to foster good industrial relations.

Monsanto WM Retires

G. V. Taylor, works manager at the Newport factory of Monsanto Chemicals Ltd., is to retire on June 1. He will be succeeded by A. C. W. Pemberton, general superintendent of technical services at Monsanto's Fawley factory.

Mr Taylor joined Monsanto in 1934, after graduating from the Manchester College of Technology, and occupied a number of positions at the Ruabon factory prior to moving to Newport.

Mr Pemberton graduated in chemical engineering at University College, London, in 1950 and joined Monsanto's Newport factory staff the same year. In 1958 he transferred to the Fawley factory as general superintendent of manufacturing.

Boil-in-the-Bag Film Packs

Boil-in-the-bag film packs were successfully introduced into this country last year. But the Americans are progressing a long way beyond cooking the humble kipper in this way. A pack has been made from Du Pont's Mylar polyester film which, dipped in boiling water for 15min., produces boneless breast of broiled chicken 'with a piquant sauce', garnished with fresh coconut, shaved almonds and 'chunked' pineapple.

Some American experts in food believe that this will not simply make a meal quicker — it will change what they call 'home eating habits'. Each member of the family will be able to eat a different meal, and, depending on the size of the refrigerator, the family can have as varied a menu as a high-class restaurant.

While this seems an excellent idea for the occasional meal, I cannot help wondering if the American experts have done their motivational research homework. Many housewives actually like cooking and like being praised for a good meal. Advertisements that suggest that your guests will think how clever you are when you produce a complete meal from a pack must be written by copywriters whose cookery knowledge is limited to boiling water.

Mulroy Moves

John Mulroy, *RPW's* cartoonist, has resigned from the board of the Empire Rubber Co. Ltd. He has joined the sales staff of the Victaulic Co. Ltd. (rubber division).

John Mulroy, who has been injecting a dose of humour into *RPW* every week for the last ten years, is a Lincolnshire man who was educated in Birmingham. From 1938-40 he was chief draughtsman at P. B. Cow. After joining Empire Rubber (as chief draughtsman) in 1945, he carried out an extensive tour of many rubber companies in America.

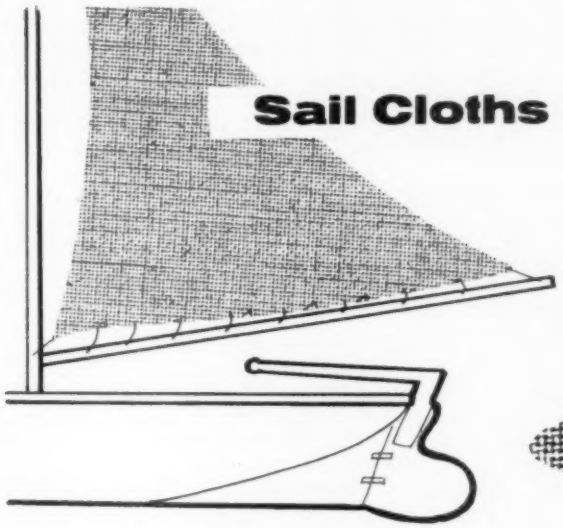
Sticking to Aluminium

One of the lightest river boats for its size in service is the 700-ton MS *Europa* on the River Rhine. Carrying over 200 passengers, between Basle and Rotterdam and back, the *Europa* draws less than 5ft. of water. Such a shallow draught is due to the extensive use of aluminium for the superstructure and exterior decking.

Before specifying aluminium as a principal material of construction, however, the builders of *Europa* had to solve a tricky adhesion problem. They found that aluminium was a difficult substrate on which to obtain a good adherence of most decking material. The answer was found in a compound of neoprene latex with long asbestos fibres.

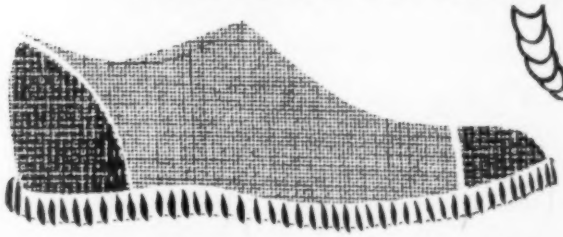
A green pigmented coating was applied to the decking by trowel in two days, and is expected to last at

Eight representatives of some of Du Pont's elastomers distributors from Europe and Asia, photographed with members of the Du Pont Co. (UK) Ltd., during a training course at the company's Elastomers Research Laboratory at Hemel Hempstead. Back row *(left to right)*: **G. B. Oks (UK), T. Köhler (Germany), W. Nielsen (Denmark), K. H. Whitlock (UK), D. C. Verma (India), L. Nyberg (Sweden), J. P. Peters (Du Pont de Nemours International S.A.). Front row: C. Guyottot (France), J. N. Milne (UK), A. Dattoo (Pakistan), D. J. B. Coulter (manager, Elastomers Research Laboratory), L. Mundet Gomes (Portugal), A. Fiber (UK), J. G. Thopil (India)**



Sail Cloths

Protective Clothing



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least as long as the ship is in service — 20 years or more.

From Wolverhampton to Luxembourg

Gordon Smith, plant manager of the Goodyear Tyre and Rubber Co.'s Wolverhampton factory, is leaving shortly for Luxembourg, to become manager of the company's plant there. Mr Smith has been with Goodyear (UK) since 1949, working successively as superintendent, industrial products division; superintendent tyre and tube division; and, since 1957, plant manager. A native of Chatanooga, Tennessee, he was with Goodyear in America and Mexico before coming to this country.

Executive Beagles

At an air display in Coventry recently, visitors saw two of the 'Beagle pack' of new British light aircraft. These are designed for the busiest of busy executives, tired of crowded roads.

One model, the Airedale, is a four-seater, with a tricycle under-carriage. The other, the Terrier, is a two-three seat training/tourer. Both have seats sprung with Pirelli rubber webbing.

Kay Appointments

Dr D. F. Rushman, chief chemist of Kay Brothers Ltd. for the past three years, has been elected to the board of Kay Brothers and its subsidiary companies. He has been active on the Plastics and Polymer Group Committee of the Society of Chemical Industry for six years and has been its programme secretary for some time.

V. G. Walter, 43, has joined Kay Brothers Plastics Ltd., as assistant to the sales manager. The sudden weight of business caused by trade interest in foambacks means that Mr Walter will devote practically all his time to administering Kay's foambacks department.

Never Be Out of Stock

One of many executives visiting this country recently was Freddie Zollinger, general manager of SCEI, Malaya, in London for discussions with Pirelli Ltd. His company, which has been distributor of Pirelli tyres in Malaya since before the war, has a remarkable reputation for efficiency and administration which has contributed to Pirelli attaining a good share of the Malayan tyre market.

'The hall-mark of success in this type of work is never to be out of stock', said Mr Zollinger.

Mr Zollinger's company has a reputation for stock variety, including racing tyres. Apparently racing is a very active sport in Malaya, including motor cycle meetings and rallies.

Appointments in Brief

J. H. Lord has joined the Board of Whessoe. He is a director of Dunlop Rubber Co., G. and J. Weir (Holdings) and other companies.

* * *

Brian Pavey has been appointed technical manager of Burtonwood Engineering Co., of Warrington, Lancashire.

Polly Ester Says...

'Scorch time — lap record at Silverstone'

THE LEGAL ANGLE

When is a Strike Illegal?

By a Barrister

'About 800 of the 1,100 rubber workers at the factory of the India Tyre and Rubber Co. Ltd. at Inchinnan, Renfrewshire, went on strike on February 21 in support of the strikers at Dunlop Rubber Co.'s factory at Speke, near Liverpool.'—RPW, February 25 1961.

If an employer wishes to prevent an employee from competing against him, he may include a clause 'in restraint of trade' in the contract of service; but this is *prima facie* void as being 'contrary to public policy'. In other words, the law tries to give as much freedom as possible to men to use their skills and talents to earn themselves a living. But have you ever wondered whether the law does not regard certain strikes as being 'contrary to public policy'? When is a strike illegal, in fact?

Generally speaking, strikes are only illegal in war-time. But there are certain exceptional cases — set out in the Conspiracy and Protection of Property Act, 1875, when a strike may be a criminal offence, even in days of national peace. But these exceptions relate to essential supplies — gas, water and electricity, in particular — and do not directly affect employers in the rubber and plastics industries.

Section 5 of the Act provides for up to three months' imprisonment or a £20 fine for a person who wilfully and maliciously breaks his contract of service, knowing or having reasonable cause to believe that the probable consequences of his act, whether done alone or in combination with others, will be to endanger human life, or to cause serious bodily injury, or to expose valuable property to destruction or injury. Once again, this is unlikely to apply in our industries.

On the other hand, a strike may be an offence at civil law: it may involve a breach of contract. It all depends on the way in which the strike is called. If the strikers give notice equal to the notice which they should give to determine their contracts, there will be no breach of contract. Just as an employer can terminate their service by giving that notice, so they can put an end to the employment by taking the same step themselves. On the other hand, if the strike notice is either non-existent, or insufficient, the strikers are in breach of their contracts of service and can in theory — be sued for damages. But, as usual, the master will have to prove what damage he suffered as a result of each individual breach of contract. And — again as usual — this is usually an impossible task.

The result? If you are an employer, it is up to you to keep your men at work — you will get very little help from the law. And if you are an employee, then whatever worries the strike may bring you, you need not fear court action.

Electrical Aids in Industry *Data Sheet* **No.18**

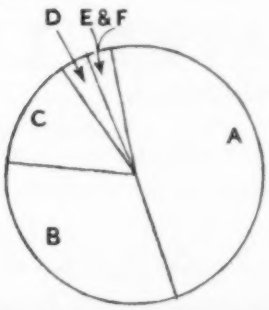
Factory Heating-1

The space heating of factories by electrical means can be achieved in a variety of ways which will be dealt with in the next Data Sheet.

Before deciding on any form of factory space heating—whether by means of electricity or not—it is as well to have clearly in mind all the components of the total annual running cost, and not merely the fuel cost, of the installation.

They are:

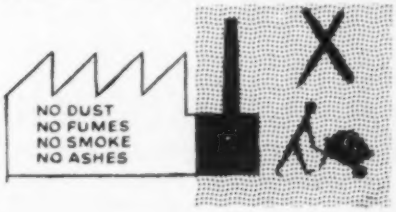
(A) The cost of the fuel or the electricity,
(B) Interest and depreciation on the capital cost of the installation,
(C) Labour,
(D) The cost of running auxiliary plant such as fans and pumps,
(E) Maintenance,
(F) Insurance.



In comparing fuel costs it should be borne in mind that electric heat is refined heat and has had all the fuss, bother and dirt of the conversion of fuel into heat taken out at the generating station.

In arriving at the true figures for capital cost and depreciation, maintenance, and insurance, those connected with such items as boilerhouse, chimney, fuel store and access road should be included; labour costs should include such tasks as ash disposal. None of these items occurs when electricity is used, although space will be required for the electric boiler and storage vessels in the case of the type (h) following.

Electricity provides the ideal answer to the requirements of the Clean Air Act, the impact of which has introduced an important new factor during the last few years.



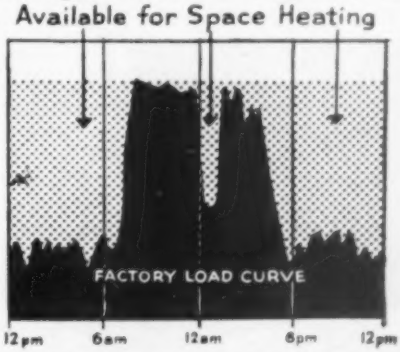
The following list gives the main types into which electric heating installations fall:

(a) High temperature ("infra-red") overhead heaters operating at near red heat.
(b) Medium temperature panels operating at surface temperatures of 400° to 600°F.
(c) Extended surfaced heating in the shape of floorwarming operating at temperatures up to 80°F.
(d) Oil and water filled radiators.
(e) Tubular heaters.
(f) Unit heaters.
(g) Storage block heaters.
(h) Electric boilers and water heaters operating in conjunction with hot water radiators or panels either with or without water storage.

All these methods of electric heating can be divided into two distinct classes:

(a) Those that utilise electricity during "off-peak" hours and store the heat so generated for use at a later period.
(b) Those that use electricity whenever the heating system is in use (i.e. direct electric heaters).

The use of a heat storage system in a small works on a block tariff takes advantage of the lower tariff offered for an off-peak supply, and in the larger factory on a Maximum Demand tariff means that the heating load will not incur any M.D. charge.



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E.D.A. also have available on free loan in the U.K. a series of films on the industrial uses of electricity. Film and Book catalogues and Publications List sent on request.

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least as long as the ship is in service — 20 years or more.

From Wolverhampton to Luxembourg

Gordon Smith, plant manager of the Goodyear Tyre and Rubber Co.'s Wolverhampton factory, is leaving shortly for Luxembourg, to become manager of the company's plant there. Mr Smith has been with Goodyear (UK) since 1949, working successively as superintendent, industrial products division; superintendent tyre and tube division; and, since 1957, plant manager. A native of Chatanooga, Tennessee, he was with Goodyear in America and Mexico before coming to this country.

Executive Beagles

At an air display in Coventry recently, visitors saw two of the 'Beagle pack' of new British light aircraft. These are designed for the busiest of busy executives, tired of crowded roads.

One model, the Airedale, is a four-seater, with a tricycle under-carriage. The other, the Terrier, is a two-three seat training/tourer. Both have seats sprung with Pirelli rubber webbing.

Kay Appointments

Dr D. F. Rushman, chief chemist of Kay Brothers Ltd. for the past three years, has been elected to the board of Kay Brothers and its subsidiary companies. He has been active on the Plastics and Polymer Group Committee of the Society of Chemical Industry for six years and has been its programme secretary for some time.

V. G. Walter, 43, has joined Kay Brothers Plastics Ltd., as assistant to the sales manager. The sudden weight of business caused by trade interest in foambacks means that Mr Walter will devote practically all his time to administering Kay's foambacks department.

Never Be Out of Stock

One of many executives visiting this country recently was Freddie Zollinger, general manager of SCEI, Malaya, in London for discussions with Pirelli Ltd. His company, which has been distributor of Pirelli tyres in Malaya since before the war, has a remarkable reputation for efficiency and administration which has contributed to Pirelli attaining a good share of the Malayan tyre market.

'The hall-mark of success in this type of work is never to be out of stock', said Mr Zollinger.

Mr Zollinger's company has a reputation for stock variety, including racing tyres. Apparently racing is a very active sport in Malaya, including motor cycle meetings and rallies.

Appointments in Brief

J. H. Lord has joined the Board of Whessoe. He is a director of Dunlop Rubber Co., G. and J. Weir (Holdings) and other companies.

* * *

Brian Pavey has been appointed technical manager of Burtonwood Engineering Co., of Warrington, Lancashire.

Polly Ester Says...

'Scorch time — lap record at Silverstone'

THE LEGAL ANGLE

When is a Strike Illegal?

By a Barrister

'About 800 of the 1,100 rubber workers at the factory of the India Tyre and Rubber Co. Ltd. at Inchinnan, Renfrewshire, went on strike on February 21 in support of the strikers at Dunlop Rubber Co.'s factory at Speke, near Liverpool.'—RPW, February 25 1961.

If an employer wishes to prevent an employee from competing against him, he may include a clause 'in restraint of trade' in the contract of service; but this is *prima facie* void as being 'contrary to public policy'. In other words, the law tries to give as much freedom as possible to men to use their skills and talents to earn themselves a living. But have you ever wondered whether the law does not regard certain strikes as being 'contrary to public policy'? When is a strike illegal, in fact?

Generally speaking, strikes are only illegal in war-time. But there are certain exceptional cases — set out in the Conspiracy and Protection of Property Act, 1875, when a strike may be a criminal offence, even in days of national peace. But these exceptions relate to essential supplies — gas, water and electricity, in particular — and do not directly affect employers in the rubber and plastics industries.

Section 5 of the Act provides for up to three months' imprisonment or a £20 fine for a person who wilfully and maliciously breaks his contract of service, knowing or having reasonable cause to believe that the probable consequences of his act, whether done alone or in combination with others, will be to endanger human life, or to cause serious bodily injury, or to expose valuable property to destruction or injury. Once again, this is unlikely to apply in our industries.

On the other hand, a strike may be an offence at civil law: it may involve a breach of contract. It all depends on the way in which the strike is called. If the strikers give notice equal to the notice which they should give to determine their contracts, there will be no breach of contract. Just as an employer can terminate their service by giving that notice, so they can put an end to the employment by taking the same step themselves. On the other hand, if the strike notice is either non-existent, or insufficient, the strikers are in breach of their contracts of service and can in theory — be sued for damages. But, as usual, the master will have to prove what damage he suffered as a result of each individual breach of contract. And — again as usual — this is usually an impossible task.

The result? If you are an employer, it is up to you to keep your men at work — you will get very little help from the law. And if you are an employee, then whatever worries the strike may bring you, you need not fear court action.

Electrical Aids in Industry *Data Sheet* **No.18**

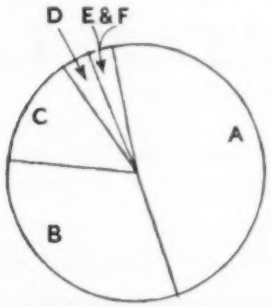
Factory Heating-1

The space heating of factories by electrical means can be achieved in a variety of ways which will be dealt with in the next Data Sheet.

Before deciding on any form of factory space heating—whether by means of electricity or not—it is as well to have clearly in mind all the components of the total annual running cost, and not merely the fuel cost, of the installation.

They are:

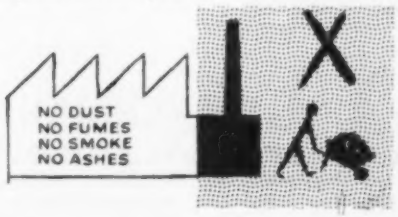
(A) The cost of the fuel or the electricity,
(B) Interest and depreciation on the capital cost of the installation,
(C) Labour,
(D) The cost of running auxiliary plant such as fans and pumps,
(E) Maintenance,
(F) Insurance.



In comparing fuel costs it should be borne in mind that electric heat is refined heat and has had all the fuss, bother and dirt of the conversion of fuel into heat taken out at the generating station.

In arriving at the true figures for capital cost and depreciation, maintenance, and insurance, those connected with such items as boilerhouse, chimney, fuel store and access road should be included; labour costs should include such tasks as ash disposal. None of these items occurs when electricity is used, although space will be required for the electric boiler and storage vessels in the case of the type (h) following.

Electricity provides the ideal answer to the requirements of the Clean Air Act, the impact of which has introduced an important new factor during the last few years.



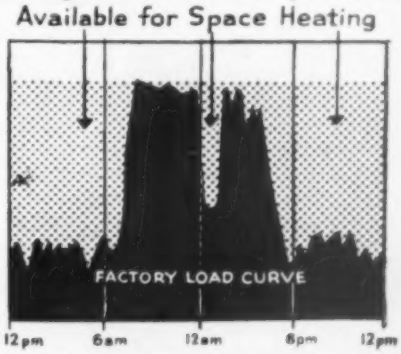
The following list gives the main types into which electric heating installations fall:

(a) High temperature ("infra-red") overhead heaters operating at near red heat.
(b) Medium temperature panels operating at surface temperatures of 400° to 600°F.
(c) Extended surfaced heating in the shape of floorwarming operating at temperatures up to 80°F.
(d) Oil and water filled radiators.
(e) Tubular heaters.
(f) Unit heaters.
(g) Storage block heaters.
(h) Electric boilers and water heaters operating in conjunction with hot water radiators or panels either with or without water storage.

All these methods of electric heating can be divided into two distinct classes:

(a) Those that utilise electricity during "off-peak" hours and store the heat so generated for use at a later period.
(b) Those that use electricity whenever the heating system is in use (i.e. direct electric heaters).

The use of a heat storage system in a small works on a block tariff takes advantage of the lower tariff offered for an off-peak supply, and in the larger factory on a Maximum Demand tariff means that the heating load will not incur any M.D. charge.



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Telephone: Chancery 2401-2 Telegrams: Plastrub, Estrand, London

Plastics Statistics

MARCH EXPORTS AND IMPORTS

PLASTICS exports dropped slightly again during March 1961 to 15,432 tons (£3,502,397). The February 1961 figure was 16,028 tons (£3,625,198) and the March 1960 figure 16,090 tons (£4,021,314). These figures are given in the official Trade and Navigation accounts. The Soviet Union took the largest quantity (1,271 tons) followed by Hong Kong (804), South Africa (735) and Australia (701).

Imports during the month were 7,235 tons (£2,474,637), compared with 8,817 tons (£2,804,737) in the same month last year, and 5,440 tons (£2,029,954) in February 1961. USA continued to be the major supplier with 2,298 tons, followed by Western Germany with 1,452 tons and Italy with 646 tons. Imports for the first quarter stood at 19,529 tons (£6,920,156): slightly less than the imports for the same period last year: 22,490 tons (£7,089,163).

Exports for the first quarter amounted to 49,996 tons (£11,464,805), compared with 44,562 (11,376,979) in the same period last year.

Details of imports of plastics materials during March 1961:	Tons	£
Acrylics	341	115,778
Alkyd solid and liquid resins, solutions, emulsions and dispersions	197	35,228
Cellulose plastics:		
Acetate butyrate	100	101,297
Photographic (including cinematograph) film base (except acetate butyrate)	208	233,632
All other	168	104,522
Polyamides	308	243,348
Polystyrene	328	65,777
Polyvinyl chloride:		
Polymers and copolymers	2,366	326,036
All other	616	199,058
All other	2,603	1,049,961
Total	7,235	2,474,637

Exports of plastics materials during March 1961:	Tons	£
Acrylic sheet, rod, tube, film, foil and profile shapes in primary form	749	433,275
Alkyd solid and liquid resins, solutions, emulsions and dispersions	475	93,765
Aminoplastics:		
Solid and liquid resins, including solutions	1,004	109,961
Moulding and extrusion compounds	752	126,953
Cellulose plastics:		
Moulding and extrusion compounds	266	92,106
Sheet, rod, tube film (excluding regenerated cellulose), foil and profile shapes in primary form	168	94,484
Phenolics and cresylics:		
Solid and liquid resins (straight and modified)	700	105,458
Other	671	244,641
Polystyrene	1,272	227,295
Polythene (polyethylene) sheet, rod, tube, film, foil and profile shapes in primary form	120	46,325
Polyvinyl chloride:		
Polymers and copolymers	1,500	194,580
Moulding and extrusion compounds	1,415	282,498
Sheet	692	288,343
Other	130	27,028
All other	1,770	1,064,211
Waste and scrap (including celluloid and film waste and scrap)	748	71,474
Total	15,432	3,502,397

UK exports to countries in the European Economic Community (Common Market) and the European Free Trade Association are shown below.

EXPORTS TO EEC

	Mar. 1960	Mar. 1961
Western Germany	879	449
Netherlands	448	1,060
Belgium	539	432
France	448	664
Italy	801	546
	3,115	3,151

Exports to Commonwealth countries during the month were 4,262 tons (4,887 in March 1960) and exports to all other foreign countries were 5,343 tons (5,546 tons).

EXPORTS TO EFTA

	Mar. 1960	Mar. 1961
Sweden	628	628
Norway	446	356
Denmark	623	812
Switzerland	375	262
Portugal	356	371
Austria	117	247
	2,545	2,676

(Any apparent discrepancies are due to rounding off of figures)

CROP RETURNS

Unless otherwise indicated the figures quoted, to the nearest thousand lb., represent crop returns for the month stated and for the number of months of the planting company's financial year to date. Corresponding figures are given in parentheses.

HARRISONS AND CROSFIELD LTD.

March

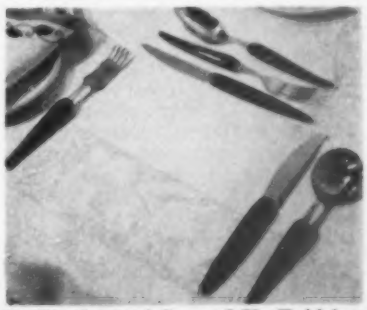
London Asiatic.—1,375 (1,438). 3 mths—4,717 (4,681).
Oriental.—226 (232). 3 mths—792 (769).
Lanadron.—418 (362). 3 mths—1,401 (1,206).
Pataling.—1,147 (1,091). 5 mths—6,756 (6,626).
Jugra.—363 (339). 5 mths—2,278 (2,394).
Golden Hope.—655 (651). 1 mth—655 (651).
New Crocodile.—207 (209). 1 mth—207 (209).
Bukit Kajang.—95. 1 mth—95.
Castlefield.—261 (238). 9 mths—2,497 (2,408).
Holyrood.—77 (70). 3 mths—268 (255).
Hongkong.—34 (25). 3 mths—108 (87).
Hoscote.—253 (232). 9 mths—2,460 (2,159).
Killinghall.—51 (32). 9 mths—479 (390).
Kuala Selangor.—58 (58). 3 mths—201 (188).
Kulai.—197 (173). 5 mths—983 (868).
Malaysia.—52 (46). 3 mths—184 (173).
Prang Besar.—327 (302). 12 mths—4,104 (3,212).
Sandac.—62 (103). 12 mths—804 (969).
Seaport.—83 (63). 9 mths—828 (654).
Mayalam.—476 (457). 12 mths—8,836 (7,281).
Lunuva.—87 (107). 3 mths—248 (317).
London Sumatra.—2,125 (2,123). 12 mths—31,361 (28,300).
Bah Lias—154 (150). 5 mths—1,001 (783).
Central Sumatra—64 (66). 9 mths—701 (643).
North Tongan.—267 (245). 7 mths—1,981 (1,709).
Sialang.—170 (172). 2 mths—384 (384).
Tanah Datar.—55 (57). 3 mths—212 (193).

Export Opportunities

Plastics for Belgium

Société Anonyme P. J. Zurstrassen and Fils, 108 Rue de Palais, Verviers, has informed the British Embassy at Brussels that it wishes to represent UK manufacturers of plastics raw material, laminated plastics, synthetic resins and articles of plastics.

Manufacturers interested in this inquiry should write direct to the Belgian firm, notifying at the same time the Commercial Department, British Embassy, 2 rue de Spa, Brussels 4, that they have done so (ESB/13360/61).



H. Housley and Sons of Sheffield has introduced a new range of contemporary design cutlery with black nylon handles injection moulded from M and B Plastic's 'Technyl' nylon

Rubber Statistics

UK — USA — CANADA — LIBERIA — NIGERIA — SINGAPORE

UK imports of rubber (natural, synthetic and reclaimed) in March 1961 totalled 38,238 tons, compared with 29,589 tons in March 1960. Exports were 5,915 tons (4,699 tons in March 1960). The Board of Trade has issued the following details:

IMPORTS

	March 1961	March 1960
Nigeria	2,943	2,068
Singapore	5,398	3,782
Federation of Malaya	15,288	8,652
Ceylon	801	4,147
British North Borneo	581	297
Canada	1,972	2,421
Other Commonwealth Countries and Irish Republic	315	135
Vietnam	2,435	405
Indonesia	1,597	319
USA	3,381	8,525
Other foreign countries	3,527	1,568
Total	38,238	29,589
Rubber latex	2,571	3,419
Other raw, including crepe	29,208	14,291
Balata	28	31
Synthetic rubber	5,188	10,047
Others	1,243	1,801
Total	38,238	29,589

EXPORTS

Commonwealth countries and Irish Republic	1,243	1,684
West Germany	688	318
Spain	857	336
Netherlands	252	220
Other foreign countries	2,875	2,141
Total	5,915	4,699
Synthetic and reclaimed rubber	2,298	1,397
Waste rubber	2,181	2,332
Total	4,479	3,729

United States

The United States Rubber Manufacturers' Association reports that the total consumption of new rubber in March amounted to 120,360 tons against 109,530 tons in February.

Consumption in March comprised 34,850 tons of natural rubber and 85,510 tons of synthetic rubber (including 70,910 tons SBR).

February consumption comprised 31,871 tons of natural rubber and 77,659 tons of synthetic (including 64,710 tons of SBR).

Total synthetic rubber production in March was 112,828 tons against 101,245 tons in February, while production of SBR was 90,015 tons against 79,892 tons in February.

Total synthetic rubber exports in March were 26,300 tons against 26,167 tons in February.

Canada

Reflecting in large part the lower production of new motor vehicles, the consumption of rubber in Canada in February this year dropped 23.4% to 7,931 long tons from 10,355 a year earlier, together with a decline of 15.9% in January; consumption in the January-February period fell 19.8% to 16,025 long tons from 19,985 a year ago.

Production of synthetic rubber in February amounted to 12,775 long tons, against 12,916 year ago and in the first two months to 26,556 tons, against 25,512. Production of reclaimed rubber in February this year amounted to 396 tons against 554 year ago and in the first two months to 923 tons, against 990.

Consumption of all rubbers in February for production of tyres and tubes amounted to 5,318 long tons, compared to 7,093 a year ago and in the two months to 10,866 long tons, against 13,772 a year ago.

Liberia

Rubber production in Liberia this year is expected to reach about 100m. lb., worth £12.5m., according to the Department of Commerce and Agriculture in Monrovia.

Nigeria

Rubber exports for December 1960, totalled 2,769 tons, compared with 2,434 tons in November 1960, and 3,410 tons in December 1959.

Of the December 1960 total, 1,013 tons went to the UK, 731 tons to West Germany, 255 tons to USA, 249 tons to Czechoslovakia, 25 tons to Belgium-Luxembourg, 5 tons to the Netherlands and 491 tons to other countries.

Crepe exports amounted to 1,943 tons of which USA took 1,256 tons, the UK 522 tons and other countries 165 tons.

Singapore Stocks

Rubber stocks of all grades in Singapore at the end of March amounted to 63,041 tons against 63,335 tons in February.

The latest total comprised: dealers 47,474 tons, ports 13,374, estates 33 and stocks on transhipment from non-Malayan ports 2,160 tons.

BOOK REVIEW

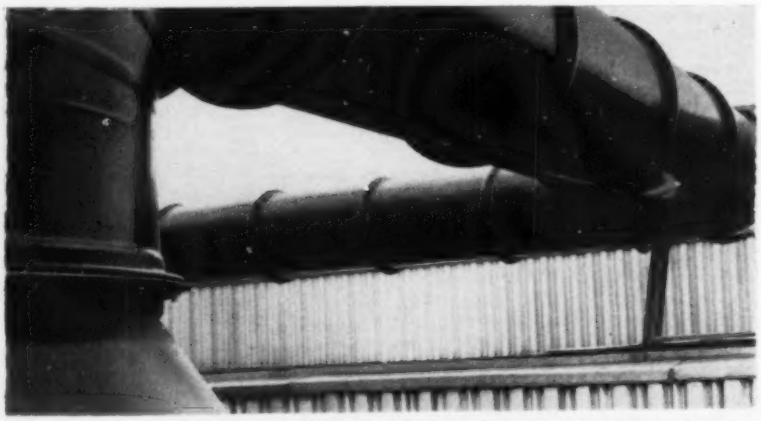
Trade Names of Rubbers, Resins and Plastics

The third volume of a publication listing trade names of rubbers, resins and plastics, has just been issued by the Rubber and Plastics Research Association of Great Britain.

This lists alphabetically all the new materials in the synthetic rubber and plastics fields which have come to the notice of the association in the five years 1955-59, giving a description of each material, together with the name and location of the manufacturer. Together with the two volumes issued in 1949 and 1955, it represents a complete index of all the rubbers, plastics and resins on the Shawbury files since 1926, and should be of great assistance in tracing materials known by trade name only, and for information on new materials.

The present report consists of 242 pages, and is available to members of RAPRA for 25s. post free. Volume 1 is out of print but a few copies of Volume 2 (1949-54) are still available and can be had, together with the new publication, by members for 35s. post free for the two volumes. Prices to non-members are £3 for one volume and £4 10s. for the two volumes.

Orders, accompanied by cash, should be addressed to the Secretary of the Association at Shawbury, Shrewsbury, Shropshire.



This ducting at Courtauld's 'Fibro' manufacturing plant has been given an anti-corrosive coating by dipping in pvc. The ducting is part of the degassing plant and carried 5,000 cu. ft. min. of air saturated with water vapour and containing CS_2 and H_2S

Plantation Newsletter

COMMITTEE TO STUDY PRICE STABILIZATION

by our Malayan Correspondent

FROM KUALA LUMPUR

THE Malayan Government has repeatedly made known its policy of striving for stabilization of commodity prices. As a result of the international agreement a large measure of price stability for tin has already been realized.

But the problem presents greater difficulties in the case of rubber. The boom prices prevailing in the first half of 1960 were mainly responsible for the large surplus reported at the end of the year by the Federal Treasury. Even so, it is recognized that excessive prices will only strengthen the challenge by synthetic.

On the other hand, if the price goes below an economic level, it will have dire results on the industry as well as the Government, which is depending on the rubber export duty for a quarter of its revenue.

The ideal would be to maintain a price on the 85 cents to $1 range, as this would not only ensure a reasonable margin of profit but would enable producers to compete with synthetic on the price basis.

Many experts believe that the days of $1 a lb. rubber are past, and that the survival of the industry rests on its ability to reduce production costs to a minimum which could withstand the threat of synthetic.

This has been accepted by the industry. Nevertheless, producers cannot afford an uneconomic price. This is where stabilization is essential.

Following the discussion at the last meeting of the International Study Group, held in Kuala Lumpur, it was decided to set up an expert committee to examine the problem.

Vital to Economy

It is appreciated, however, that, to be effective, any international stabilization scheme must have the participation of the big industrial countries. The Mayalan Government will no doubt work in this direction as a slump in the rubber price would greatly damage the Malayan economy.

The case for stabilization may be irresistible, but the industrial countries can be indifferent with immunity. In fact, they could argue that stable prices would remove the urge towards efficient production and maintenance of a high quality commodity.

Malaya has been elected a member of the United Nations Commission on International Commodity Trade, and it is in this forum that she will press her case for stabilization of prices.

She has already emphasized the necessity for concerted international action at various conferences and she is not disheartened at the lack of results so far.

With synthetic to fall back upon in the event of natural becoming too costly, the manufacturing countries may feel that their interests could not be jeopardized in any event.

However, to the primary producing countries, wide fluctuations would involve risks and strains which can be ruinous. This explains why the Malayan Government has this problem uppermost in mind and will seek every opportunity to press for a solution.

Replanting Inducements

Malaya is convinced that the competitive position of the rubber industry must be maintained by vigorous replanting. It is therefore necessary to provide further incentives to estates and smallholdings to replant.

The Assistant Minister of Commerce and Industry, Mr Cheah Theam Swee, made these comments in the House of Representatives here when he sought approval for the expenditure of the development estimates for this year.

Mr Cheah said that with regard to smallholders, the Government was considering amending the Fund 'B' scheme to allow smallholders who had replanted the first one-third of their acreage to carry out replanting of a further one-third.

'In addition, in order to induce smallholders who own less than five acres to replant, the Government is actively giving consideration to the increasing of the replanting grant to a figure not only to meet the economic needs of the smallholders but also to enable Fund "B" to extend its control of the replanted holdings', he added.

Mr Cheah explained that this was to prevent these holdings from being tapped prematurely.

He also said that a more concerted effort would be made to induce smallholders who own less than five acres and who were unable to cut down their old trees to new plant collectively.

The difficulty had been with regard to land and he hoped that the State Governments would make land available easily. So far a total of 103 new planting schemes covering 75,000 acres have been launched under the supervision of State Land Development Boards.

This completed the quota to be new planted under this scheme.

Association Officials

ANNUAL general meetings of various Associations of the Federation of British Rubber and Allied Manufacturers have been held recently, and details of new officials for 1961/62 have been released.

J. Etchells (BTR Industries Ltd.) has been appointed chairman of the Association of British Ebonite Manufacturers, and E. Bowker (Dunlop Rubber Co. Ltd.) has been appointed chairman of the British Rubber Hot Water Bottle Manufacturers' Association.

Re-elected officers include H. H. H. Helby (North British Rubber Co. Ltd.) as chairman, and D. P. G. Moseley (David Moseley and Sons Ltd.) as vice-chairman, of the British Wrapped Rubber Hose Manufacturers' Association. The British Seamless Rubber and Plastics Manufacturers' Association has appointed S. D. Sutton (Veedip Ltd.) as its chairman and A. R. Reid (London Rubber Co. Ltd.) as its vice-chairman. Members of this association produce dipped articles including gloves for surgical, household and industrial purposes, bottle teats, toy balloons, and a wide range of products used in several industries and professions.

T. Thirley (Runnymede Rubber Co. Ltd.) has been appointed chairman of the British Rubber Flooring Manufacturers' Association, A. M. Carr (Semtex Ltd.) as its vice-chairman, and David D. Marshall (Greengate and Irwell Rubber Co. Ltd.) has been re-elected chairman of the British Rubber and Plastics Belting Manufacturers' Association.

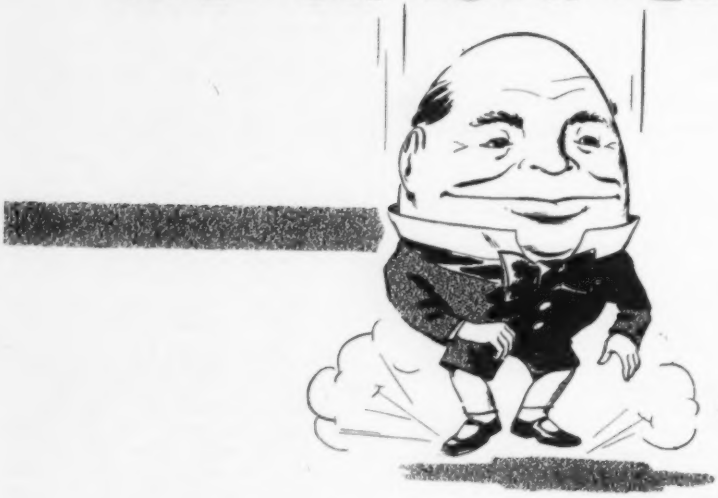
Officers appointed within the British Cellular Rubber and Plastics Manufacturers' Association are A. Wrigley (Sorbo Ltd.) as association chairman, and J. H. Webb (Kay Brothers Plastics) as vice-chairman. In the cellular rubber section D. J. Scott (St. Albans Rubber Co. Ltd.) has been appointed chairman, and S. B. Turner (Expanded Rubber Co. Ltd.) vice-chairman, while in the plastics foam section J. H. Webb (Kay Brothers Plastics) became chairman and G. F. Carr (Dunlop Rubber Co. Ltd.) was appointed vice-chairman.

Finally, S. G. Deaves (BTR Industries Ltd.) has been appointed chairman of the British Moulded Rubber Hose Manufacturers' Association.

GSA Rubber Sales

The General Services Administration in Washington sold 4,361 long tons of natural rubber during April from the national stockpile, bringing to 107,256 long tons the amount of stockpiled rubber sold under the disposal programme.

FALL ON YOUR FEET....



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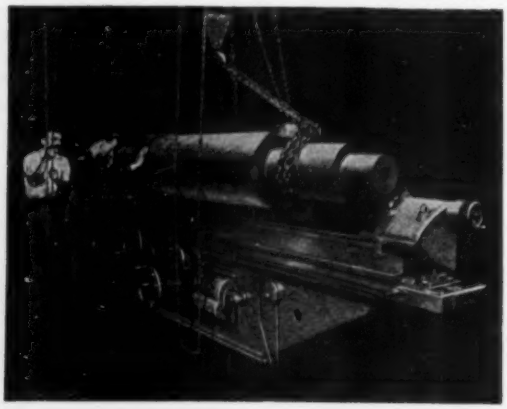

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Rubber and Plastics Stock Market

A REVIEW OF PRICES AND TRENDS

APRIL is one of the biggest months for company news and therefore provides an important guide to the overall experience which firms have undergone during their own individual trading periods. The company that carries out this investigation reported that industrial profits were up a fraction below 8% on the figures for 1960. The reports of 400 companies were looked into which was the same number and the same concerns as a year ago. This increase, however, is the smallest for over 12 months. What is more it continues the steadily declining trend in the rate of advance. In the first month of the year the increase was 23%, February 11% and in March 8.4%. This means that the average rise for the first four months of 1961 is only 12½% as against 22% for the whole of 1960. Of the selections analysed last month, six reported lower profits. They included electrical equipment rubber manufacturers and merchants.

Despite this warning about the slowing down in the rate of profits growth, the stock market has continued to make impressive headway. There have been occasions when the profit takers gained the upper hand. Overall, however, these have been rare and on the whole jobbers have had little or no success with their efforts to get much-needed stock back on the books. Only the other week it was reported that they had run short of I.C.I. stock. A remarkable event to say the least, for there are no less than 264m. shares in issue at the moment. During the latest thrust ahead no less than 28 of the prices that appear in our table below have broken through to new peaks. Star performers included ENGLISH CHINA CLAYS, GREEF CHEMICAL, I.C.I. and UNIVERSAL ASBESTOS.

Shareholders of BICC must have been pleased with the news that results to date are encouraging and provided there is no major dislocation in trade generally, the chairman looks forward to the group having a successful year. Direct exports from the UK and sales by overseas offshoots totted up to £45m. or some 31% of the total. The chairman explained that the real contribution is even higher, for a substantial part of the group products sold to customers in the UK finds its way overseas in the form of other made-up goods.

Share Price Movements

Par Value	Company	1961 High	Low	April 29	Latest
£1	A.E. Ind. Ord.	48/6	40/3	45/3	43/-
5/-	Albright & W. Ord.	29/6	26/3	28/3	29/-
£1	„ „ „ 5% Pref.	17/3	14/6	14/9	14/6
5/-	Anchor Chemical Ord.	23/-	16/-	20/6	22/9
4/-	Airfix	52/6	34/6	50/6	50/9
4/-	„ Non Voting	50/-	33/6	47/9	49/-
5/-	Andersons Rub. Ord.	—	—	3/9	3/9
£1	Angus Geo. Ord.	77/6	58/6	74/-	77/6
5/-	Ault & Wiborg Ord.	29/-	25/9	28/6	28/9
£1	Avon India Rubber Ord.	46/6	30/-	37/9	37/6
£1	„ „ „ 6% Pref.	19/3	18/-	18/9	18/9
10/-	Bakelite Ord.	58/6	42/3	57/3	58/-
£1	„ 6% Pref.	19/3	16/6	18/-	17/6
£1	Baker Perkins Ord.	59/6	40/6	58/3	58/9
4/-	Bank Bdg. Rubber Ord.	3/6	1/9	3/6	3/-
4/-	Bettix	11/9	7/6	11/6	11/-
4/-	Brammer H. Ord.	17/-	16/-	16/6	16/-
10/-	Bridge, David Ord.	60/-	46/9	56/-	59/6
5/-	Bright, John Ord.	18/3	13/9	16/6	18/3
5/-	Brit. Blting & Asb. Ord.	24/-	17/6	22/6	23/9
£1	„ „ „ „ Pref.	—	—	15/9	15/9
5/-	British Electronic Indus.	15/6	12/-	14/6	14/-
2/-	Brit. Ind. Plas. Ord.	13/9	7/9	13/9	13/-
2/-	„ 10% (tax free) Pref.	9/9	4/3	4/9	9/9
£1	British Xylonite Ord.	90/-	63/-	90/-	90/-
£1	„ „ 5% Pref.	18/9	14/-	14/4½	14/4½
£1	BICC Ord.	62/-	50/3	60/-	61/6
5/-	BTR Ind. Ord.	19/9	13/6	17/9	16/9
£1	„ „ 7½% Pref.	21/6	20/9	21/-	21/3
£1	Courtaulds Ord.	47/6	39/6	42/3	45/6
£1	„ 5% 1st Pref.	15/6	14/9	14/9	15/3
£1	„ 6% 2nd Pref.	18/3	16/9	17/6	17/6
4/-	Cow, P. B. Ord.	10/3	7/6	10/1½	10/1½
£1	„ „ 5% Pref.	14/3	13/3	13/6	13/6
1/-	Dannimac Mfg. Ord.	15/3	12/-	14/9	15/-
10/-	De La Rue Ord.	68/-	56/-	65/-	67/6
£1	„ „ „ 3½% Pref.	10/6	9/6	10/-	10/-
10/-	Distillers Co. Ord.	39/9	30/-	38/1½	39/6
£1	„ „ 6% Pref.	20/3	18/3	18/9	18/9
£100	„ 5% Conv. Loan	£96	£91	£95	£92½
£100	„ 5½% Unsec. Loan	£86½	£80½	£80½	£80½
10/-	Dunlop Rubber Ord.	29/-	21/6	26/7½	27/9
£1	„ „ 5½% Pref.	16/-	15/-	15/6	15/9
£100	„ 3½% 1st Debs.	£69	£67	£68½	£68½
£100	„ 4½% 2nd Debs.	£79	£76	£77½	£78
£1	Eng. Elect. Ord.	40/6	32/3	37/6	35/9
4/-	Ebonite Cont. Ord.	8/6	7/-	7/7½	7/6
£1	English China Clays Ord.	117/6	80/-	111/6	117/-
£1	Goodyear Tyre 4% Pref.	11/6	10/9	11/3	11/3
5/-	Greeff Chem. Ord.	33/9	22/9	31/-	33/9

Par Value	Company	1961 High	Low	April 29	Latest
10/-	Greeff Chem. 5½% Pref.	8/3	7/9	7/6	7/6
4/-	Greengate & Irwell Ord.	6/6	5/6	6/3	6/6
5/-	Hackbridge Hldg.	6/9	4/9	5/6	5/6
£1	Harrisons & Crosfield Dd.	57/6	48/9	57/6	57/6
1/-	Hunt & Moscrop Ord.	2/3	1/3	1/10½	2/-
£1	Imp. Chem. Ord.	80/6	63/-	75/3	79/1½
£1	„ „ 5% Pref.	15/9	14/9	15/1½	15/9
£100	„ 4½% Unsec. Loan	£82½	£78	£79½	£80½
£100	„ 5½% Conv. Loan	£93	£87	£87	£90½
1/-	Kleemann (O. & M.) Ord.	19/3	8/3	16/9	18/6
£1	„ 6½% Pref.	17/6	16/3	16/3	16/3
5/-	Laporte Ind. Ord.	30/9	24/-	28/6	28/9
£1	„ „ 7½% Pref.	23/-	21/3	21/9	21/3
£1	Leyland & Birm. Rubber Ord.	59/3	46/3	59/-	58/9
£1	„ „ „ 6% Pref.	18/9	17/6	18/1½	17/6
2/-	London Rubber	14/9	9/6	14/9xc	14/6
£1	„ 6% Red. Cum. Pref.	20/-	17/6	17/6	17/6
£1	McKechnie Bros. Ord.	61/3	53/6	60/-	60/6
£1	„ „ 'A' Ord.	63/-	52/6	57/6	62/6
£1	„ „ 6% Cum. Pref.	18/-	16/-	17/-	17/-
5/-	Monsanto Chem. Ord.	27/6	23/-	25/3	25/-
£1	„ „ 3½% Pref.	12/6	11/6	12/1½	12/-
£100	„ „ 6% Debs.	£98	£95½	£95½	£95½
5/-	Miles (H.G.) Hldgs. Ord.	7/9	7/-	7/-	7/6
2/-	Movitex	—	—	6/9	6/10½
£1	North British Rubber	21/3	13/9	13/9	14/3
5/-	Northwestern Rubber	13/-	9/-	12/-	12/-
5/-	Plastic Enginrs. Ord.	37/6	28/6	37/-	37/-
10/-	Projectile & Eng. Ord.	50/6	22/6	47/6	47/6
5/-	Redfern Holdings Ord.	3/9	2/9	3/6	3/-
2/-	RFD Ltd. Ord.	6/3	3/6	4/4½	6/3
£1	„ „ 5½% Pref.	15/-	12/6	13/6	13/6
2/-	Rubber Imp. Ord.	6/3	3/3	4/3	4/-
2/-	„ „ 'A' Ord.	5/-	2/9	3/-	3/3
£1	„ „ 5% 1st Pref.	13/3	11/3	12/3	12/3
5/-	Rubber Reg. Ord.	17/6	16/9	17/6	17/3
4/-	Shaw Francis Ord.	24/6	18/9	24/3	24/-
2/-	Silentbloc Ord.	10/3	8/3	9/4½	10/3
5/-	Storey Bros.	46/-	35/-	42/9	42/3
2/-	Sussex Rubber Ord.	2/7½	1/9	2/6	2/3
5/-	Sutcliffe Speak Ord.	18/6	13/6	17/6	18/3
£1	Tootals	34/3	28/-	33/-	32/3
£1	Turner & Newall Ord.	78/-	55/-	74/9	74/-
£1	„ „ „ 7% Pref.	21/6	20/9	21/-	21/3
5/-	Universal Asbestos Ord.	27/-	21/3	22/-	26/6
5/-	Viscose Dev. Ord.	15/6	13/3	14/-	15/3
5/-	Warne W. (Holdgs.) Ord.	21/-	14/9	20/4½	19/9

Rubber Markets

LONDON

A rising trend reflecting the East was followed by irregularity, but prices showed a further net gain. For the most part the market was thin, with trading selective. Lower Malayan exports for April having been expected, tended to be disregarded. Continued limited factory interest was evidenced by a discount for nearby rubber as compared with forward terminal and shipment positions.

Latest prices are as follows:

No. 1 RSS spot: 26⅜d.-26⅝d.

Settlement House:

June 26⅜d.-26⅝d.

July/September 26⅝d.-26⅞d.

October/December 26⅜d.-27d.

January/March (1962) 26⅜d.-27d.

April/June 26⅜d.-26⅞d.

No. 1 RSS cif basis ports:

May 26⅛d.-26⅜d.

June 26⅜d.-26⅝d.

July 26⅜d.-26⅝d.

Godown:

May 89¾ Straits cents nominal.

LATEX

Centrifuged 60% latex per gallon in drums, seller, May, 15s. 2d., cif European ports. Spot, seller, 15s. 8d. Bulk, seller, d.w. 15s. 1d. Creamed, seller, not quoted. Normal, seller, May, 12s. 3d.

NEW YORK

The New York rubber market ruled as under on May 8:

DEALERS' PRICES

	US cents per lb., ex-dock	
	May 8	Previous
No. 1 RSS, May	32¼a	32¼a
June	31⅛b–31⅜a	31⅜a
No. 2 RSS, May	32a	32a
June	31⅜b–31⅛a	31⅜a
No. 3 RSS, May	31⅜a	31⅜a
June	31⅛b–31⅛a	31⅛a
No. 1 RSS, Spot	32⅛n	32⅛n
No. 3 amber blanket crepe, May	26⅛n	26⅛n

FUTURES—REX CONTRACT

	US cents per lb.	
	May 8	Prev. Close
May ..	31.10n	31.25n
July ..	31.70t	31.85t
September	31.50-31.45t	31.60t
November	31.30b–31.40a	31.45b–31.55a
January..	31.10b–31.25a	31.20b–31.25a

Sales: 52. Tendency: Steady.

Futures were moderately higher in early dealings on May 8, but slipped on profit-taking subsequently. Dealings were moderately active. Physical rubber was quiet. Futures were latterly barely steady on scattered selling. Dealings for the day were moderate.

SINGAPORE

Very quiet conditions prevailed throughout the morning of May 8 with prices fluctuating only narrowly. There was some enquiry for lower sheet, but mostly for switching. Factories were out of the market. In the afternoon the market ruled steady with sellers scarce and buyers, at times, fairly keen to purchase. Lower sheets were in small demand.

	Malayan cents per lb., fob Malayan ports to open ports	
	May 8	Prev. Close
No. 1 RSS, May ..	90⅛–90½	88⅞–89¼
No. 1 RSS, June ..	90⅛–91	89⅛–89¾
No. 2 RSS, May ..	89½–90⅛	88⅛–89
No. 3 RSS, May ..	89⅛–89¾	88 –88½
No. 4 RSS, May ..	85⅛–86⅛	84⅛–85½
No. 5 RSS, May ..	77⅛–78⅛	76⅛–77½
No. 1 RSS, Spot ..	89⅞–90⅜	88⅛–89
No. 3 blanket thick remilled crepe, May	72½–73½	71½–72½
No. 1 fine pale crepe, May	95½–96½	95 –96½
2X thin brown crepe, May	69¾–70½	68½–69½
Tendency:	Steady.	

The Industries Syndicate quote latex, native produce, 60% centrifugal, packed in rectangular drums, fob, at 175.00d. per gallon.

AMSTERDAM

The Amsterdam rubber market ruled as under on May 8:

	Guilders per kilo	
No. 1 RMA	May 8	Previous
May	2.41	2.41
June	2.41	2.41
July	2.46	2.44
August	2.46	2.44
September	2.46	2.44
July/September ..	2.46	2.44

Sales: Nil. Tendency: Steady.

DJAKARTA

A very quiet tendency prevailed throughout the day of May 8 with prices generally steady at last Saturday's level. Sales in No. 1 sheet, ready delivery, at 35.00 rupiahs per kilo were noted today amounting to 20 tons. The market closed quiet with buyers scarce and sellers in the majority.

	Rupiahs per kilo	
	May 8	Previous
Spot No. 1 Priok ..	34.00b	34.00b
Spot No. 2 Priok ..	33.00b	33.00b
Spot No. 3 Priok ..	32.00b	32.00b
No. 1 fine pale crepe, spot	29.00b	28.50b
Tendency:	Quiet.	

BANGKOK

The price of No. 1 RSS at Bangkok on May 8 was 28.62½ (28.37½) US cents per lb.

CEYLON

The price of No. 1 RSS at Colombo on May 8 was 111 (108¾) Ceylon cents per lb.

Buy Further Ahead

A representative of the International Chamber of Commerce has appealed to consumer countries to help maintain world economic stability by buying primary commodities ahead of their needs and thus maintaining a 'steady pipeline of supply'.

The official, Mrs Roberta Lusardi, stressed that this need not impede the consumers normal efforts to purchase at the cheapest possible rate. Trading in futures, preferably six months ahead, should be encouraged, she said.

Calls for Tenders

Plastics Materials

A/S Un-Sa-Co, Skippergaten 30, Oslo, has informed the British Embassy at Oslo, that it would like to represent UK manufacturers of plastics sheets, cellulose acetate butyrate sheets, polypropylene sheets and plastics raw materials. The Norwegian company operates an agency and wholesale business and maintains a sales office for factories in Oslo. It represents several foreign manufacturers.

Manufacturers interested in this enquiry should write to the above address, at the same time notifying the British Embassy, Drammensveien 4, Oslo, that they have done so.

Rubber Joint Rings

Vulcanized natural rubber joint rings of various sizes for use in mains conveying water and sewage, are required by the Government of Pakistan, Department of Supply and Development, Frere Road, Karachi, Pakistan. Bids should be sent to this address, quoting tender No. VA-2/ICA/400/63195/30/C/60.

Closing date: May 18 1961 (Ref. ESB/14996/61 ICA).

Machinery for Rubber Industry

Senor Aristides Prajoux, principal partner in Aristides Prajoux y Cia Ltda., manufacturers of industrial rubber equipment, has informed the British Embassy at Santiago, that he wishes to get in touch with UK manufacturers of machinery and chemicals for the rubber industry. Senor Prajoux will be in the UK from May 12.

Manufacturers interested in this enquiry should write to Senor Prajoux, c/o Room 728, Export Services Branch, Board of Trade, Lacon House, Theobalds Road, W.C.1, quoting the following reference: ESB/12039/61.

Contracts Office

The contracts division of Vitafoam Ltd. has established a London office at its Hanover Square showroom, 12a St. George Street, W.1. Peter Crofts is in charge.

Vitafoam is now fulfilling its contract for 67,000 special mattresses for the Army and the RAF, the largest single mattress order ever placed in Great Britain.

Industry INTELLIGENCE

Technical Data

Plastascreen Inks

A. G. W. Britton and Sons Ltd., Shenton Street, London, S.E.15, the manufacturer of Plastascreen process inks, has recently issued a compact booklet of colour samples.

This shows the range of over 40 colours in which these screen process inks for pvc are available. The shades are shown printed on opaque white calendered pvc sheet and all colours are readily intermixable to produce a wide range.

Additional information concerning the inks and their use and manufacture is also included, making this handy little colour swatch a rather novel means of conveying technical information.

Ethylene Thiourea

Robinson Brothers Ltd. has issued a data sheet on ethylene thiourea. While the chief use so far of this product is as an accelerator for neoprene, sold by the company under the trade name of Robac 22, it is also of interest as an anti-corrosion agent for ferrous metals against acids, and non-ferrous metals against alkaline detergents. It also forms a series of chelates with metallic salts and oxides.

Further information and copies of this technical bulletin can be obtained from Robinson Brothers Ltd., Ryders Green, West Bromwich.

Crystic 197

Scott Bader and Co. Ltd. has issued technical leaflet No. 305 which describes Crystic 197, a new bisphenol polyester resin for maximum chemical resistance. This low-pressure laminating resin has particularly good resistance to alkaline materials and should therefore find many applications in chemical plant.

The leaflet gives the properties of Crystic 197, and also included are details of possible applications, formulations and chemical resistance.

Copies of this publication can be obtained from Scott Bader and Co. Ltd., Wollaston, Wellingborough, Northamptonshire.

Empol 1022

Price's (Bromborough) Ltd., recently appointed agents for Unilever-Emery (*RPW*, February 25, 286), has issued a bulletin on a polymerized fatty acid — Empol 1022. This is said to possess excellent thermal and oxidation stability as well as extremely low volatility, and these desirable properties add to the usefulness of products made from Empol 1022. The applications which have grown to the greatest industrial significance involve the reaction of the acid with polyfunctional alcohols, polyamines and polyvalent metals to form resinous polymers.

Available on request from the company at Bromborough Pool, Bebington, Wirral, Cheshire, are leaflets of information on specific applications such as in the preparation of urethane polyesters. Also obtainable is a bulletin called 'Abstracts of Dimer Acid Use — Patents and Journal References', which describes the scope of the work accomplished to date on Dimer Acids and suggests avenues for further research effort.

Machines, Materials and Equipment

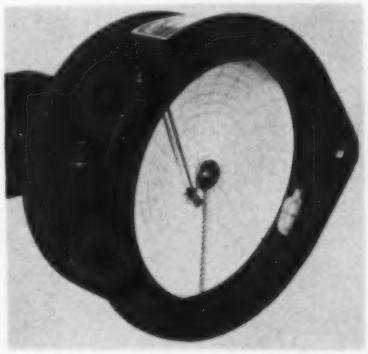
Electrical Air Filter

The Trion Electronic Air Filter marketed for industrial applications by W. C. Holmes and Co. Ltd. since 1956, has been redesigned to meet increasingly arduous operating conditions encountered in industry, and will be known in future as the Industrion Electrical Air Filter.

The new filter is said to be stronger than its predecessor, as the collecting cell is fabricated from a heavier gauge aluminium and the supporting framework and ionizing section support bar have been strengthened. The insulators are now positioned out of the main air stream — this facilitates cleaning and improves reliability. The associated electrical equipment is also more robust and includes inherent current limitation which protects the equipment in the event of a short circuit.

Pressure Recorder

Walker Crosweller has announced that its Arkon Model 60 Pressure Recorder is now available for wall mounting. Of sturdy construction, the recorder is driven either by a spring wound clock or electric motor.



The instrument uses an 8in. diameter chart having 24 hours or seven-day rotation. It is available for a wide variety of ranges from 5psi to 500psi, and is said to be suitable for the measurement of gas, air, steam, water, oil and similar liquids. The recorder has a dust and moisture proof glazed door, fitted with an integral lock, and the chart record is visible at all times. There is also a portable version available which is fitted with handle and stand; its total weight being 9½lb.

Publications

Sand Grinding

An informative booklet, reference No. BTP/83, issued by British Titan Products Co. Ltd., 10 Stratton Street, W.1, deals with tioxide pigments in a sand grinder, which is a logical development from the ball mill which hitherto has been recognized as the best means of making pigment dispersion of uniform quality. A ball mill gains in efficiency as the ball size is decreased, and hence the number of points of contact are increased. The sand grinder uses sand particles as the grinding medium, and at the same time provides a method of continuous manufacture which is flexible in operation and easily controlled.

A programme of work on sand grinding was carried out in BTP laboratories with a view to determining the optimum milling conditions for titanium dioxide pigments. The initial investigation was carried out batchwise using a ¼-gallon mill. The experiments and results are recorded in this booklet.

Electro-Heat Congress

The British National Committee on Electro-Heat reports that the complete Proceedings of the 4th International Congress on Electro-Heat, held in Stresa, Italy, in May 1959, have now been published in two volumes. This International Congress was organized by the Italian Electrotechnical Committee for and in conjunction with The International Union on Electro-Heat.

Volume 1 of the Proceedings contains the programme and a general report of the Congress, all the contributions to the discussions and a complete index. Volume 2 includes all the 185 papers presented at the Congress, each being printed in that one of the three official languages, English, French and German, in which it was presented. A summary of the contents of each paper is provided in each of these three languages.

The papers include mention of plastics, textiles, rubber and chemical and pharmaceutical industries.

The two volumes should be of some interest to British manufacturers. Further information can be obtained from The Secretary, the British National Committee on Electro-Heat, c/o The British Electrical Development Association, 2 Savoy Hill, W.C.2.

Material Prices

Prices of materials appear regularly in RUBBER AND PLASTICS WEEKLY each month. It will be appreciated if suppliers will give notification of any price changes and additions to or deletions from their range. Comments on the present materials and classifications are invited in order that the list may be made of maximum service to our readers.

Unless otherwise stated prices are per lb. In most cases prices vary according to quantity. pc—per cwt pg—per gallon pt—per ton ag—according to grade xs—ex-store xw—ex-wharf dp—duty paid sp—special prices for contracts del—delivered cp—carriage paid

Accelerators

Alpha	5s. 8d.—6s. 4d.
Ancap cp	2s. 10d.—3s. 8d.
Ancap Zinc Salt cp	3s. 2d.—4s. 2d.
Ancatax cp	3s. 9d.—4s. 6d.
Ancazate BU cp	6s. 3d.—6s. 9d.
Ancazate ET cp	5s.—6s. 4d.
Ancazate ME cp	6s. 2d.—7s.
Ancazate Q cp	6s. 1d.—6s. 4d.
Ancazate XX cp	5s. 1d.—5s. 9d.
Ancazide ET cp	5s. 9d.—6s. 6d.
Ancazide IS cp	7s. 6d.—8s. 6d.
Ancazide ME cp	4s. 6d.—5s.
Cu.D.D.	9s. 3d.—10s.
D.Bu.D.	10s. 6s.—11s. 3d.
D.D.D.	12s. 2d.—13s. 3d.
D.P.G. cp	3s. 5d.—4s. 2d.
D.O.T.G. cp	4s. 5½d.—4s. 9d.
Dibenzo GMF	27s.—28s. 6d.
Furbac cp	5s.—5s. 9d.
Gamma	10s. 6d.—11s. 3d.
GMF	27s.—28s. 6d.
L.M.D.	9s. 3d.—10s.
M.Z.I.	3s. 6d.—4s. 2d.
N.Bu.D.	10s. 6d.—11s. 3d.
Ni.P.D.	12s. 2d.—13s. 3d.
P.P.D.	12s. 2d.—13s. 3d.
P.T.D.	12s. 2d.—13s. 3d.
Robac 22	10s.—11s. 3d.
Robac 44	9s. 1d.—9s. 10d.
S.P.D.	9s. 3d.—10s.
Suparac M	9s. 7d.
T.B.U.T.	15s.—16s.
T.E.T.	6s. 6d.—7s. 4d.
Thiuram P.25	15s.—16s.
T.M.S.	7s. 8d.—8s. 6d.
T.M.T.	5s. 4d.—6s. 3d.
Vulcacit CZ deldp	7s. 1d.
Vulcacit F deldp	4s. 8½d.
Vulcacit NP deldp	11s. 2d.
Vulcacit P Extra N deldp	8s. 1d.
Z.B.E.D.	15s.—16s.
Z.Bu.D.	6s. 3d.—7s. 3d.
Z.D.C.	5s. 1d.—5s. 7d.
Z.L.	9s. 3d.—10s.
Z.P.D.	9s. 3d.—10s.

Antioxidants and Antiozonants

Agerite AK cp	3s. 6½d.—4s. 5½d.
Agerite HPX cp	4s. 5d.—4s. 10d.
Agerite Powder cp	3s. 7d.—4s.
Agerite White cp	8s. 10d.—9s. 7d.
Antioxidant 2246 cp	11s. 8d.—12s. 4d.
Antioxidant 425 cp	18s. 6d.—19s. 3d.
Antioxidant SP cp	3s. 8d.—5s.
BLE-25	3s. 7d.—4s. 5d.
BXA	3s. 6½d.—4s. 5½d.
Naugawhite	4s. 9d.—5s. 6d.
Octamine	3s. 9d.—4s. 6d.
Polygard	3s. 7½d.—4s. 5d.
UOP 88 xs	9s. 3d.
UOP 288 xs	9s. 3d.
Wing-Stay S	3s. 8d.—4s.
Wing-Stay T	4s. 10d.—5s. 6d.
Wing-Stay 100	10s. 6d.—11s. 6d.

Compounding Ingredients

Barytes ptag	£10—£40
Calcium Silicate del	9d.—10½d.
Calcene ptxw	£52—£69 10s.
Carbonate, Light Mg. ptsp	£97
Carbonate, Actidated Ca. pt	£28—£30

Carbon Blacks:

Conductex SCF	1s. 2½d.
Continental AMPC ag	11½d.—1s. 4½d.
Continex FEF ag	9½d.—10½d.
Continex HAF ag	10½d.—11d.
Continex HMF ag	9½d.—9½d.
Continex ISAF ag	1s. 0½d.—1s. 0½d.
Continex SRF, SRF-NS ag	8½d.—9d.
Dixie 45 GPF xs	6½d.—7½d.
Dixie 60 HAF xs	7½d.—8½d.
Dixie 70 ISAF xs	9½d.—10½d.
Dixiedensed HM MPC xs	11½d.
Dixiedensed 77 EPC xs	11½d.
Furnex SRF	9d.
Kosmos 45 GPF	6½d.—7½d.
Kosmos 60 HAF	7½d.—8½d.
Kosmos 70 ISAF	9½d.—10½d.
Magecol 888 cp	7.60d.
Micronex MPC	11½d.
Micronex W6 EPC	11½d.
Philblack A. FEF	7d.—8d.
Philblack E. SAF	1s. 0½d.—1s. 1d.
Philblack G. GPF	6½d.—7½d.
Philblack I. ISAF	9½d.—10½d.
Philblack O HAF	7½d.—8½d.
Regal 300	7½d.—8d.
Regal 600	9½d.—10d.
Statex B. FF	10½d.
Statex R. HAF	11d.
Statex 93 HMF	9½d.
Sterling SO FEF	7d.—7½d.
Sterling V. GPF	6½d.—7d.
Ukarb 327 GPF xs	6½d.—7½d.
Ukarb 340 xs	7½d.—8½d.
Vulcan 6 ISAF	9½d.—10d.
Vulcan C CF	11d.—11½d.
Vulcan 3 HAF	7½d.—8d.
Vulcan XXX SCF	1s. 2½d.—1s. 2½d.
China Clay ptagxs	£12—£68 10s.
Factice Dark cp	1s. 0½d.—1s. 7d.
Factice Whitbro cp	1s. 3½d.—1s. 11d.
Factice White	1s. 4½d.—1s. 8½d.
Kieselguhr Spanish White ptxs	£37 12s. 6d.
Lithopone 30% ptxs	£68 10s.
Manosil VN3 pt	£120 5s.—£150 5s.
Micafine Powdered Mica ptxs	£67 10s.
Ochre Yellow pcxs	£1 19s.
Oxide Light Mg ptsp	£245
Oxide Red pcxs	£4 3s.
Oxide Titanium 98% pcxs	£8 8s
Rutiox CR pcxs	£9 3s
Rubber Gen. Gran. Mineral ptxs	£35 5s.
Shellac Dewaxed xs	1s. 9d.—2s. 3d.
Shellac Orange xs	2s.—3s. 9d.
Silica Hydrated ptxs	£113
Sulphur Manox Insoluble del	1s. 9d.
Sulphur Powdered ptdel	£20 17s.
Sulphur Sublimed Flowers ptxs	£52 10s.
Talc Norwegian ptxs	£13 7s. 6d.
Talc Italian ptxs	£30 2s. 6d.
Tufknit Durham CS	8½d.—10½d.
White Lead Dry ptdelsp	£114 15s.
Whitetex 2 Clay ptxs	£45 10s.
Whiting ptxs	£5 9s. 6d.—£7 7s. 6d.
Zinc Oxide pcdel	£6

Plasticizers and Softeners

Abalyn pc	220s.—271s.
Al Stearate ptxwdp	£253 10s.
Bisoflex 102 pt	£513—£568
Butyl Ricinoleate	2s. 6d.—2s. 6½d.
But. Ac Ricinoleate	3s. 0½d.—3s. 1½d.
Butyl Stearate pt	£277—£282
Ca. Stearate ptcp	£220
Diallyl Phthalate	3s. 11d.—4s. 11½d.
Dialkyl Phthalate pt	£221—£222
Dibutyl Phthalate pt	£203—£204
Dibutyl Sebacate	5s. 9½d.
DiOA pt	£354—£357
DiOS sp	5s. 0½d.—5s. 2d.
DOA pt	£414—£420
DOP pt	£276—£277
DOS sp	5s. 7½d.—5s. 9d.
Disobutyl Phthalate pt	£196—£197
Diisooctyl Phthalate pt	£221—£222
Dinonyl Phthalate pt	£211—£212
DNS sp	5s. 2½d.—5s. 4½d.
Ester Gum pcag	130s.—150s.
Flexol 3GO	4s. 8d.
Hercolyn pc	242s.—294s.
Lankroflex ED3	3s. 2d.—3s. 2½d.
Lankroflex 29 pt	£216—£217
Lead Stearate ptxwdp	£223 10s.
Methyl Ricinoleate	2s. 4d.—2s. 4½d.
Me. Ac Ricinoleate	2s. 11½d.—3s. 0½d.
Polyglycol Oleate 400 pt	£285
Reomol D79A pt	£354—£357
Reomol D79S sp	5s. 0½d.—5s. 2d.
Reoplex 100 sp	6s. 1½d.—6s. 2½d.
Reoplex 110 sp	5s. 10d.—6s. 5½d.
Reoplex 220 sp	5s. 6½d.—5s. 8d.
Reoplex 300 sp	7s. 2d.—7s. 3½d.
Reoplex 400 sp	4s. 2½d.—4s. 4d.
Rosin Oil pgag	8s.—18s.
Triphenyl Phosphate pt	£366
Tricresyl Phosphate pt	£233
Trixylyl Phosphate pt	£200
Zinc Stearate ptdel	£220—£230

Solvents and General Chemicals

Acetic acid ptdel	£77—£100
Acetic Anhydride ptdel	£128
Acetone ptdel	£75—£120
Alcohol:	
Absolute 74.5 op pgdel	4s. 0½d.—4s. 4½d.
Butyl pt	£132—£193 10s.
sec-Butyl ptdel	£128—£168
Ter-Butyl ptdel	£172—£195
Isopropyl Tech. 99% pgdel	5s.—6s. 5½d.
Butyl 'Carbitol' pt	£283
Butyl Acetate pt	£159—£217
Caprylic Acid ptdel	£395
Carbon Bisulphide ptxs	£71 10s.
Carbon Tetrachloride pg	12s. 4d.—20s.
'Cellosolve' Acetate pt	£250
Cresol m- 98% del	4s. 9d.
Cresol o- 30/31°C. del	1s.
Cresol p- 34/35°C. del	5s.
Ethyl Acetate pt	£131—£189
Formaldehyde ptdel	£40
Glycol:	
Diethylene pt	£158
Ethylene pt	£132
Polyethylene 200 pt	£214
,, 300 pt	£214
,, 400 pt	£214
,, 1,500 pt	£264
,, 4,000 pt	£274
,, 6,000 pt	£294
Isopropyl Acetate pt	£126—£184
Isobutyl Acetate 80% pt	£126—£185
Lauric Acid ptdel	£273
M.E.K. ptdel	£134 10s.—£143 10s.
M.I.B.K. ptdel	£166—£209
Methylated Spirits pgdel:	
Industrial 61op	5s. 5½d.—7s. 2d.
,, 74 op	6s. 3d.—7s. 11½d.
'Q' grade 68 op	8s. 5½d.—10s. 5d.
Pyridinised 66 op	5s. 10d.—7s. 6½d.
Denatured Methanol	3s. 9½d.—4s. 10d.
Monoethanolamine pt	£252
Naphtha Coal tar pg:	
Heavy 90—190	4s.
Light 90—160	5s. 1d.
Palmitic Acid ptdel	£147
Phenol pldel	1s. 4d.—1s. 7d.
Pyridine pg	16s. 6d.
Stearine ptag	£108—£130
Toluol Pure/Nitration pg	5s. 8d.
Toluol 90's pg	5s.
Triethanolamine pt	£224
Xylol 2/30 pg	5s. 9d.

IRI GOLF

Southerness Tankard

The Scottish section of the Institution of the Rubber Industry Golfing Society held its first match of the season recently. This was for the Southerness Tankard and Captain's Prize, held at Helensburgh.

Unfortunately, for the second year in succession, conditions both overhead and underfoot were deplorable. Nevertheless, of the 15 present, nine completed the round.

Considering the conditions, scoring was remarkably good: J. Campbell 90 — 19: 71; W. Johnston 93 — 17: 76; W. Sommerville 84 — 7: 77; L. A. Johnson 95 — 14: 81 and J. Picken 104 — 23: 81.

NEW COMPANIES

Lexham Tyre Service Ltd. (688,731). April 4. Capital: £2,000 in £1 shares. To acquire the business of tyre dealers and distributors now carried on by Robert L. Lee and Beryl M. Lee at 44 First Avenue, Acton, W.3. The directors are: Robert L. Lee and Beryl M. Lee, both of 44 First Avenue, Acton, W.3; Doris E. Garrett, 17 Steventon Road, Shepherds Bush, W.12. Regd. office: 44 First Avenue, Acton, W.3.

Combined Plastics (Bristol) Ltd. (688,803). April 5. Capital: £100 in £1 shares. To carry on the business of manufacturers of, and dealers in, plastics and plastics goods, etc. The directors are: Edward M. Wilkins, Lewins Mead, Bristol, 1; Brian M. Wilkins, 5 Percival Road, Clifton, Bristol. Regd. office: Lewins Mead, Bristol, 1.

Trak-o-Mend Tyre Co. Ltd. (687,835). March 24. Capital: £450 in £1 shares. The directors are: Albert C. Holland, 113 Billing Road, Northampton; Alan S. Sheppard, 43 Hatton Park Road, Wellingborough; Hans G. Kuske, 33 Pendered Road, Wellingborough. Regd. office: 6 Spencer Parade, Northampton.

Brendan Fabric Printers Ltd. (687,474). March 23. Capital: £100 in 1s. shares. To carry on the business of importers, exporters and manufacturers of, and wholesale and retail dealers in, plastics, reinforced plastics, etc. The first directors are to be appointed by the subscribers.

H. King (Worcester) Ltd. (687,500). March 23. Capital: £200 in £1 shares. To carry on the business of engineers, manufacturers and finishers of goods in metal, wood, plastics, etc. The directors are: William H. Watts, 45 Oakleigh Avenue, Hallow, Worcester; John L. King, 38 Malvern Road, Worcester; Horace S. King and Robert H. Aitken.

Liquid Packaging Ltd. (687,462). March 23. Capital: £200 in £1 shares. To acquire for any estate or interest any property or assets or any concessions, licences, grants, patents, trade marks, or other rights of any kind, and to carry on the business of manufacturers of, and dealers in, cardboard, plastics, polythene or other containers, and machinery and equipment used in the manufacture thereof, and to fill such containers with all manner of liquid or solid substances, etc. The first directors will be appointed by the subscribers.

Protected Girders Ltd. (688,299). March 29. Capital: £500 in 1s. shares. To carry on the business of manufacturers, importers, exporters and distributors of, and dealers in, substances, goods and articles of all kinds made wholly or partly of chemicals, metals or plastics, or a combination of any such materials, etc. The directors are: Dr Harry Barron, 90 Shaftesbury Avenue, Southampton; Gerald L. Barron, 131 Bellemoor Road, Southampton; Samuel Barron and Leslie A. Burges. Regd. office: 139 Tottenham Court Road, W.1.

TRADE MARKS

Objections to the registration of any of the undermentioned applications may be lodged with the Comptroller-General of Patents, Designs and Trade Marks at the Patent Office, 25 Southampton Buildings, Chancery Lane, London, W.C.2, within one month of the date mentioned. The objections must be stated on Trade Marks Form No. 7, cost £2, obtainable through any money order office. The extracts—from 'The Trade Marks Journal'—given below are reproduced by permission of the Controller of H.M. Stationery Office.

Verborised (813,618). Boards and panels, all composed of fibrous cellulosic materials, for building or decoration, or for use in the manufacture of furniture, timber (other than unsawn timber). Borax Consolidated Ltd., Borax House, Carlisle Place, London, S.W.1. (Class 19; March 22 1961.)

Polyset (B809,260). Adhesives included in Class 1. Polycell Products Ltd., 73 Highgate Road, London, N.W.5. (Class 1; March 29 1961.)

Fosterene (810,438). Plastics in the form of powders, granules, pellets, dispersions, liquids and of emulsions. Foster Grant Co. Inc., 289 North Main Street, Leominster, State of Massachusetts, USA. (Class 1; March 29 1961.)

Aristocrat (809,119). Sewing machines and parts and fittings therefor included in Class 7, but not including any parts or fittings made of rubber, synthetic rubber, polyvinylchloride or of gutta-percha. Leslie Thomas Eustace, 214 St. Andrews Road, Small Heath, Birmingham, 9. (Class 7; March 29 1961.)

Mellowear (809,917). Articles of clothing for protection against accidents made from textile piece goods coated with natural or synthetic resins, the textile fabric predominating. Mellowhide Products Ltd., 26-28 Great Portland Street, London, W.1. (Class 9; March 29 1961.)

Polyset (B809,261). Adhesives included in Class 16. Polycell Products Ltd., 73 Highgate Road, London, N.W.5. (Class 16; March 29 1961.)

Ethocel (809,890). Wrapping and packaging materials made of films of plastics. The Dow Chemical Co., City of Midland, State of Michigan, USA. (Class 16; March 29 1961.)

Insoneal (811,375). Rubber and plastics, all reinforced with canvas, and articles made therefrom; all included in Class 17. Glass Sealer Co. Ltd., Everseal House, Queensway, Leamington Spa, Warwickshire. (Class 17; March 29 1961.)

Poly-Glass (809,178). Sheet material (non-textile) composed of synthetic resin plastics and glass fibres, the synthetic resin plastics predominating, for use in the manufacture of trucks, trolleys and wheeled containers, and for lining tanks, vats and similar containers. Norman Roffe (Poly-Glass) Ltd., 11 South Road, Morecambe, County of Lancaster. (Class 17; March 29 1961.)

Decostrip (811,850). Plastics in strip form for sealing joints. Secomastic Ltd., Western Road, Bracknell, County of Berkshire. (Class 17; March 29 1961.)

Micalastic (B807,168). Insulating substances, having a synthetic resin and mica base, for current-conducting parts of electrical machines. Siemens-Schuckertwerke Aktiengesellschaft. Address for service is c/o Haseltine, Lake and Co., 28 Southampton Buildings, Chancery Lane, London, W.C.2. (Class 17; March 29 1961.)

(790,759). Sheet material included in Class 17, made of textile materials coated with polyvinylchloride plastics, the textile materials not predominating. Dermide Ltd., Valley Mills, Meanwood Road, Leeds. (Class 17; April 5 1961.)

Poly-Glass (809,179). Sheet material (non-textile) composed of glass fibres and synthetic resin plastics, the glass fibres predominating, for use in the manufacture of trucks, trolleys and wheeled containers, and for lining tanks, vats and similar containers. Norman Roffe (Poly-Glass) Ltd., 11 South Road, Morecambe, County of Lancaster. (Class 21; March 29 1961.)

Silicor (810,470). Adhesive tapes, bands and strips, all included in Class 26 and wholly or principally of plastics. Fritz Muller 'Coroplast' Kg, 271 Wittener Strasse, Wuppertal-Nächstebreck, Germany. (Class 26; March 29 1961.)

Sproam (814,695). Floor coverings and underlays for floor coverings. Plastic Compounds Ltd., Suez Mill, Worsley Road, Walkden, Lancashire. (Class 27; March 29 1961.)

County Court Judgments

NOTE.—*These Judgments which are supplied from the Registry of County Court Judgments, Lord Chancellor's Department, 3 Dean's Yard, London, S.W.1, are not necessarily for debt, and some may have since been satisfied. They may be for damages or otherwise, they may relate to actions bona fide contested between the parties, or they may be against defendants liable in a representative capacity and not personally; but no distinction is made on the register. A judgment does not imply inability to pay. Judgments are not returned to the Registry if satisfied in Court Books within twenty-one days.*

Northern Asbestos Co. Ltd., Dawes Lane, Scunthorpe, Lincs. Scunthorpe and Brigg, £122, December 28 1960.

Wembley Tyre Service, 33 Blackbird Hill, N.W.9, Middlesex. Marylebone, £27, November 30 1960.

T. H. Dakint/A. Dakin and Son, 137c Windsor Road, Slough, Bucks., manufacturer of rubber and plastic products, Slough, £79, December 29 1960.

E. Spitzer, 14 Northwood Hall, Hornsey Lane, London, N.6. Blackpool, £22, January 3 1961.

A 2,000ft. rubber-covered conveyor belt made from a 4-ply Terylene cotton fabric carries 200 tons of sand and gravel an hour at a quarry in Sutton Coldfield. Barrow, Hepburn and Gale Ltd. are the manufacturers

Increases of Capital

A. and N. Plastics Ltd. (689,057). April 7. Capital: £20,000 in £1 shares. To acquire the whole of the issued share capital of A. and N. Thermo Products Ltd., Poliastic Ltd., Thermoforce Ltd., and A. and N. Transister Applications Ltd., and to carry on the business of a holding company, etc. The directors are: Albert G. T. Cole, 3 Exeter House, Putney, S.W.15; Arthur F. B. Cooke, 21 Highpoint, Highgate, N.6. Harold Wood and Francis A. Davies. Regd. office: 1 Fitzroy Square, W.1.

W. G. Eaton Rubber Co. Ltd. (689,045). April 7. Capital: £1,000 in £1 shares. To carry on the business of manufacturers of, and dealers in, rubber, etc. The directors are: Mary Hornick, 249 Wake Green Road, Birmingham, 13; Albert T. Kennedy, 22 Beverley Court Road, Birmingham, 32; Peter Vaughan. Regd. office: 53 Constitution Hill, Birmingham.

Taylor Franklin Ltd. (429,723), plastics manufacturers, etc., 39 Alexandra Road, N.W.8. Increased on August 11 1960, by £700 in 700 ordinary shares of £1, beyond the registered capital of £300.

Atomobal Ltd. (689,449). April 11. Capital: £100 in £1 shares. To carry on the business of manufacturers of, and dealers in, tyres, etc. The first directors are to be appointed by the subscribers.

Latest Wills

Mr Albert Henry Throssell, of Netherton, Chislehurst Road, Orpington, Kent, formerly a director of Bagau Seral Rubber Estates Ltd., Rubana Rubber Estates Ltd., and other concerns, who died on February 15 1961, left £81,376 net value. (Duty paid £33,935.)

Mr Horace James Thomas Herbert, of 133 Kingsbury Road, Erdington, Birmingham, a founder member of the Dunlop Sports and Social Club, who died on August 4 1960 intestate, left £1,240 net value.

CLASSIFIED ADVERTISEMENTS

RUBBER AND PLASTICS WEEKLY

National College of Rubber Technology

HOLLOWAY ROAD, LONDON, N.7

Applications are invited for Scholarships providing up to £360 per annum for fees and maintenance at the National College of Rubber Technology.

Scholarships are normally for three years from university entrance level for polymer courses covering the basic science and specialised technology required by professional rubber technologists or plastics technologists. Science graduates may apply for a one-year scholarship for an Associateship rubber or plastics course; such awards being renewable for research. Applicants must have attained the age of 18 years by August 31, 1961, be British subjects ordinarily resident in the United Kingdom, and have obtained the standard of education required.

Full details and form of application will be sent on request.

R. H. CURRELL, F.C.A.
Clerk.
(1001)

APPOINTMENTS VACANT

6d. a word, Minimum 12/6 **Box 2/-**

AN estimator, fully experienced with the manufacture of general rubber goods, is required by a Birmingham rubber company.—Apply giving age and other details to Box 1040. (1040)

A RUBBER technician is required by a firm in the Manchester area, to work on the development of a wide range of natural and synthetic rubber compounds. Applicant must have attained at least LIRI standard, and experience in compounding would be an advantage. Part-time day release would be allowed for study on a recognised IRI course.—Write giving details of age, qualifications and experience to Box 1051. (1051)

APPOINTMENTS VACANT

(continued)

CHIEF inspector required to reorganise large existing inspection department in rubber factory, Manchester area, dealing with wide variety of mechanical rubber goods, mouldings, hose and belting of all types. Applicants should preferably be approved by AID and ARB, etc.—Write giving details of experience and age, etc., to Box 1032. (1032)

DEVELOPMENT engineer for all aspects of design and development. Ability to deal with all types of mechanical products essential and experience of hand-made mechanical products, hose and roller covering will be an advantage. The vacancy is suitable for a rubber technologist with engineering experience or an engineer with knowledge of production problems in the rubber industry. Applicants without formal qualifications in either field will be considered provided they have the experience and capabilities required. Salary in line with experience. Superannuation scheme.—Apply in writing to Personnel Manager, David Moseley and Sons Limited, Chapelfield Works, Ardwick, Manchester, 12. (1046)

IF you are between 21/30 years old, have received a grammar school education, or above, and feel frustrated in your present work—write personally to the Personnel Manager, William Warne and Co. Ltd., India Rubber Mills, Barking, Essex. We have a vacancy for a keen man to handle an important sales section. The present holder of the post will shortly be appointed to the outside technical selling force of the company. A good pension scheme operates. Holiday arrangements will be honoured. (1039)

P. B. COW (PLASTICS) LIMITED

Applications are invited for the following positions within P. B. Cow (Plastics) Limited:—

Product Development Technicians for the extrusion and general fabrication departments.

Successful applicants should have an ability to solve technical and development problems associated with plastic extrusion production. Basic technical training up to Intermediate Degree standard is required and keenness, a practical outlook, some engineering aptitude and a sound practical knowledge of extrusion and fabrication of the following materials, i.e., flexible PVC, rigid PVC and Polyethylenes are essential.

The development work will be divided between the following fields:—

(a) Bottle blowing.
(b) General extrusion.
(c) Evaluation of new materials and products.
(d) Refrigerator gasket productions.

The positions will carry excellent prospects of progressing to management level and a salary in the region of £1,200 per annum.

Applications in confidence to:—

P. B. Cow (Plastics) Limited,
Falmouth Road,
Trading Estate,
Slough, Bucks.

Marked for attention of Technical Director.
(1038)

WORKS DIRECTOR

Progressive Rubber Company proposes to appoint Works Director.

Splendid opportunity with seat on the Board for man of right calibre with experience general rubber goods, industrial mouldings, supplies to footwear industry.

Commencing salary £2,000 p.a. plus substantial additional emoluments depending upon performance.

Write in strict confidence, Managing Director.—Box 1052.

(1052)

APPOINTMENTS VACANT

STAFF APPOINTMENT

DESIGNER AND FITTER ENGINEER OF HOSE COUPLINGS

A vacancy exists for a new staff appointment with an old-established and progressive rubber hose manufacturer in Hertfordshire as a fitter engineer for designing and supervising the assembling of low pressure and high pressure cotton and wire braided hose couplings, and other hose fitting work.

Excellent prospects for staff promotion.

Age between 30 and 40 years. Previous experience very necessary.—Box 966. (966)

EXPERIENCED rubber works foreman. South Manchester. Good pay and prospects.—Box 1030. (1030)

APPOINTMENTS VACANT (continued)

PLASTIC extrusion. Wanted by company in Southern Ireland, man to take charge of production. Experience of injection moulding an advantage.—State full particulars and salary required to Box 1047. (1047)

PRODUCT development in Midland Silicones Limited at Barry, South Wales. Graduate chemists with a knowledge of polymers, plastics, rubber or fibres are required for product development work in the fields of organo-silicon chemistry and silicone polymers. Problems are of both short term and long term nature, and the work should appeal to research chemists who wish to see the results of their work translated directly into useful materials. Applicants should be aged 25/32, and should preferably have research or development experience in industry. The company operates a non-contributory pension scheme and house purchase facilities are available. Good prospects of advancement in an expanding company of the Albright and Wilson Group.—Apply to Group Staff Officer, Albright and Wilson Limited, 1 Knightsbridge Green, London, S.W.1. (ref. No. 57). (1043)

WANTED. Plant draughtsman for rubber factory in the Northampton area. Applicants must have sound general engineering knowledge and experience in a similar capacity would be an advantage. Salary £850-£1,000 per annum.—Reply stating full details to Long and Hambly Ltd., Great Billing, Northampton. (1053)

CLASSIFIED ADVERTISEMENT FORM

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APPOINTMENTS WANTED 10s. MINIMUM · OTHER HEADINGS 12s. 6d. MINIMUM · ..... **words @ 6d. per word**

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Name.....

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APPOINTMENTS WANTED

6d. a word, Minimum 10/- Box 2/-

FLEXIBLE packaging. Executive with sound technical and practical experience would be interested in joining company to initiate development and eventually control department or unit allocated.—Box 1037. (1037)

YOUNG departmental manager with wide experience at home and overseas in extruding, calendering, spreading, footwear and mechanicals requires position where initiative and the ability to 'get things done' can be fully utilised.—Box 1018. (1018)

AGENCIES and REPRESENTATIVES

6d. a word, Minimum 12/6 Box 2/-

SMALL group of rubber manufacturers require the services of a sales representative with technical background for the North of England. Present production mainly consists of soling materials for the footwear industry, but expansion into other fields envisaged in the near future. Car provided. Excellent pension scheme in operation.—Apply with details of past experience, in confidence, to the Managing Director, Boro Rubber Manufacturing Co. Ltd., Para Works, Smithy Bridge, Littleborough, Lancs. (1050)

This column can be YOUR best BUYER or SELLER

RUBBER & PLASTICS

MACHINERY

Why not see for YOURSELF

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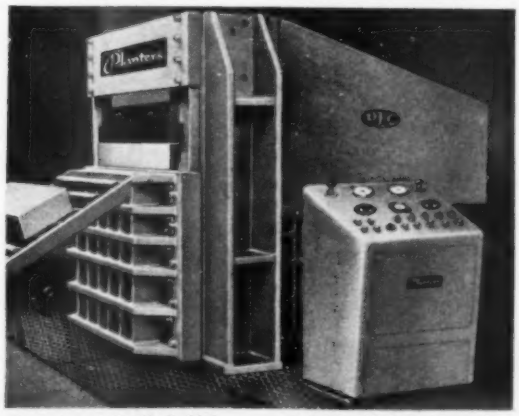

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